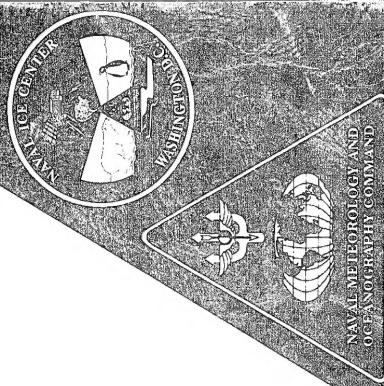


**EASTERN - WESTERN
ARCTIC SEA ICE ANALYSIS
1993**

PREPARED BY
NAVAL ICE CENTER
SUITLAND, MD

19950322 114
PREPARED UNDER AUTHORITY OF
COMMANDER, NAVAL METEOROLOGY AND
OCEANOGRAPHY COMMAND
STENNIS SPACE CENTER, MS 39529-5000

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FOREWORD

The U.S. Navy has a long and eventful history of polar exploration, including the exploits of Robert E. Peary in the Arctic to Richard E. Byrd in the Antarctic. Recently, the strategic importance and expanded polar research produced greater national and international requirements for environmental information. Since 1976, the National Oceanic and Atmospheric Administration (NOAA) and the Navy (Naval Ice Center) have worked together at the Joint Ice Center (JIC) in Suitland, Maryland; the combination of their resources and efforts continues to satisfy the demand for environmental information in both polar regions.

This publication is the 20th edition of the annual Arctic sea-ice atlases prepared by the JIC. The atlas contains weekly charts depicting Northern Hemisphere ice conditions and extent. The significant use of high resolution satellite imagery, combined with valuable ice reconnaissance data from various sources, has greatly improved the accuracy of these analyses.

The purpose of this atlas is to provide the user with reliable weekly hemispheric ice analyses. These charts are prepared by experienced Navy and NOAA ice analysts, who plot and evaluate numerous data sources:

- a. Conventional shore station, ship, and aerial reconnaissance observations;
- b. Satellite data from various sensors. Table 1, located on the inside back cover, lists these sensors and their availability;

A final product is synthesized from the inputs described above. When insufficient data is available, estimated boundaries are plotted, using meteorological data and computer generated ice drift vectors to determine estimated ice position.

Joint Ice Center
Naval Ice Center
4251 Suitland Rd, FB#4
Washington, D.C. 20395

REPORT DOCUMENTATION PAGE

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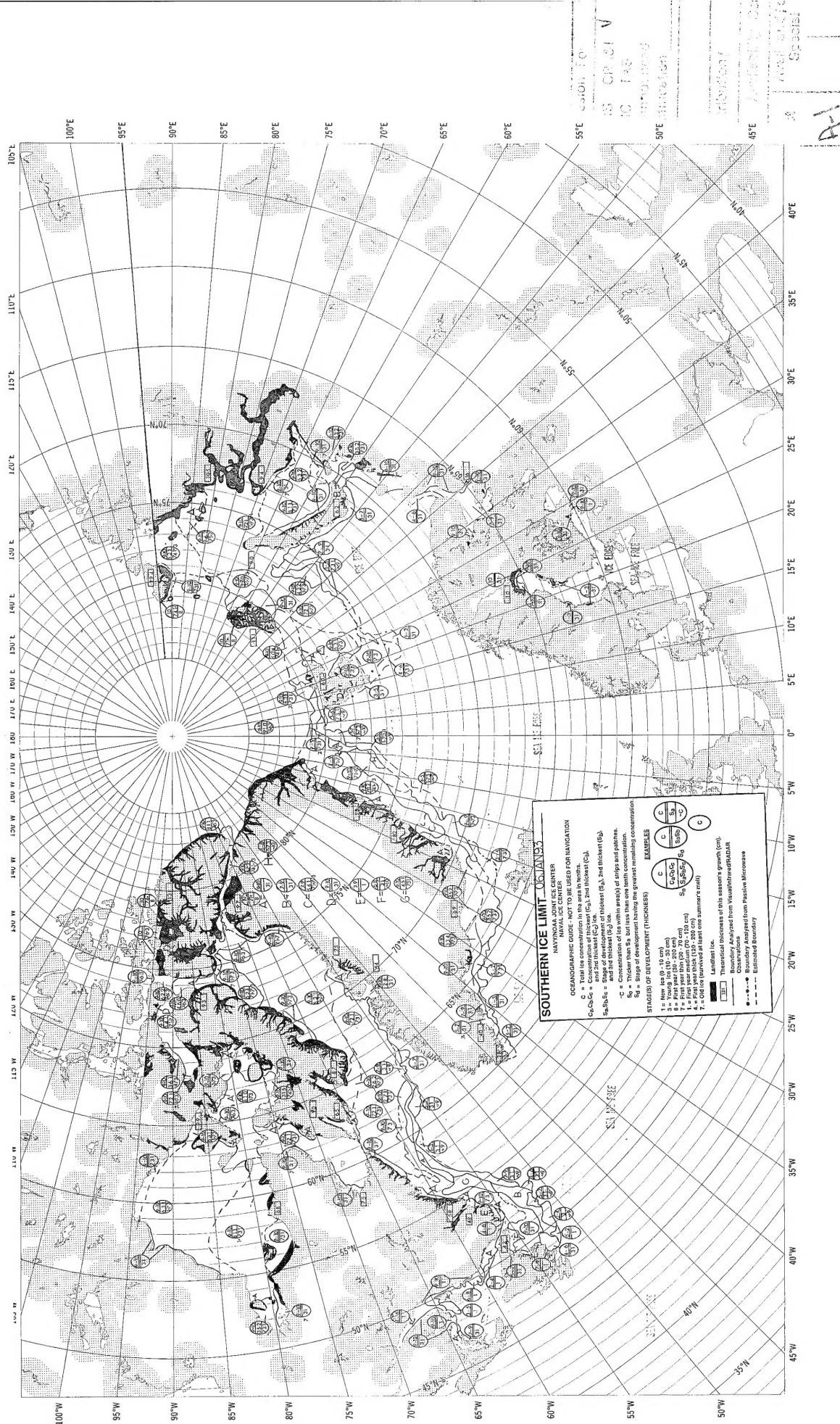
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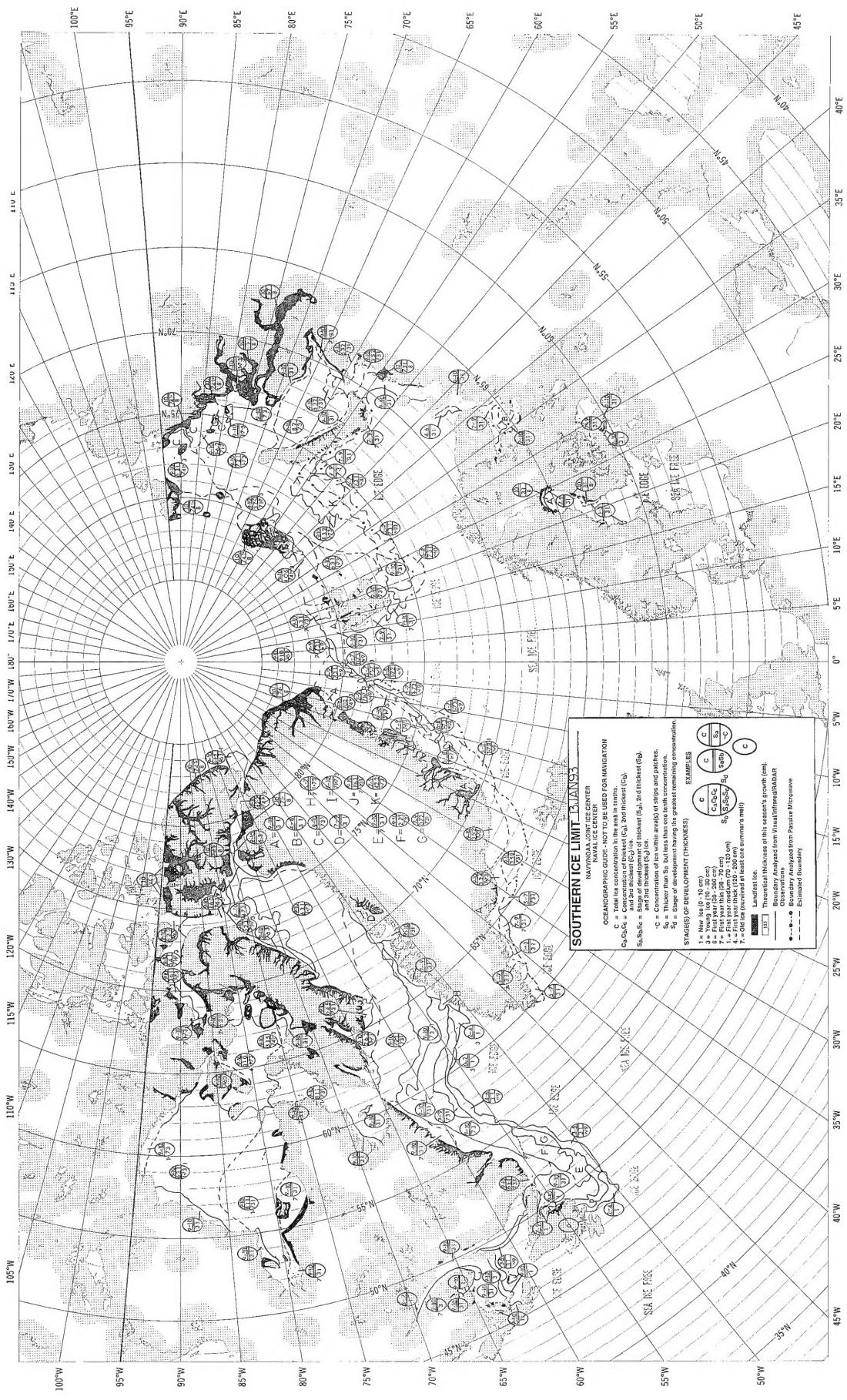
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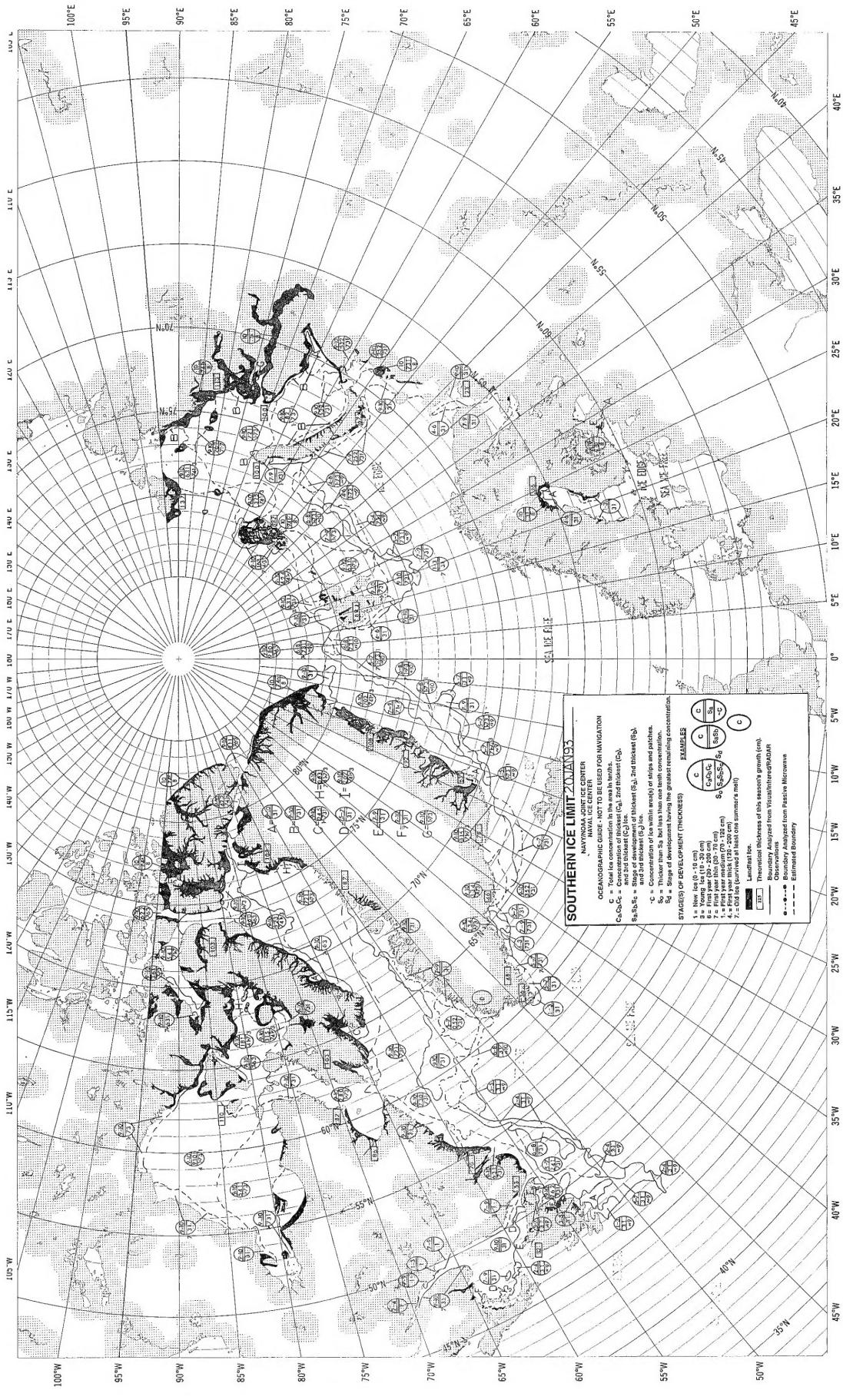
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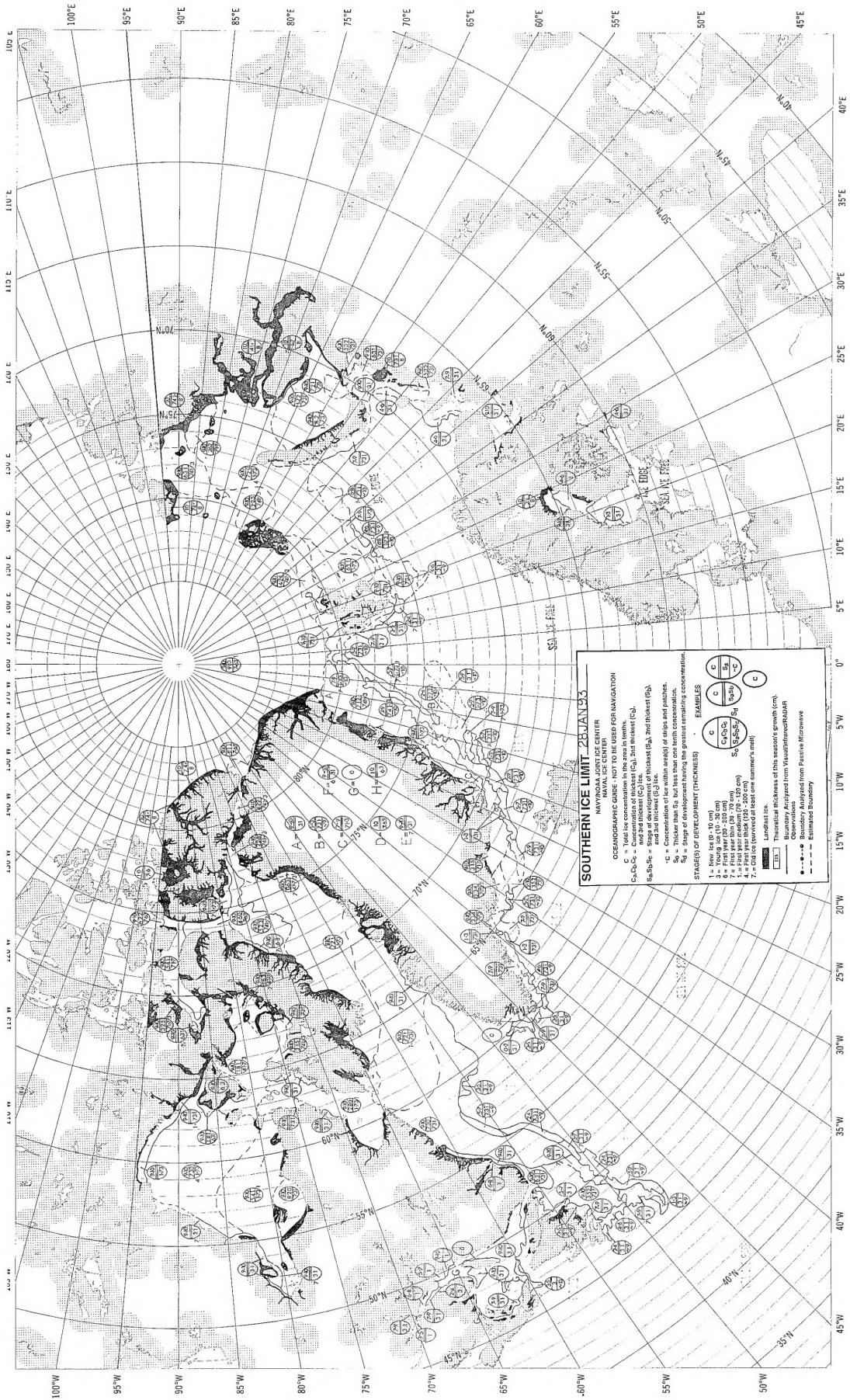
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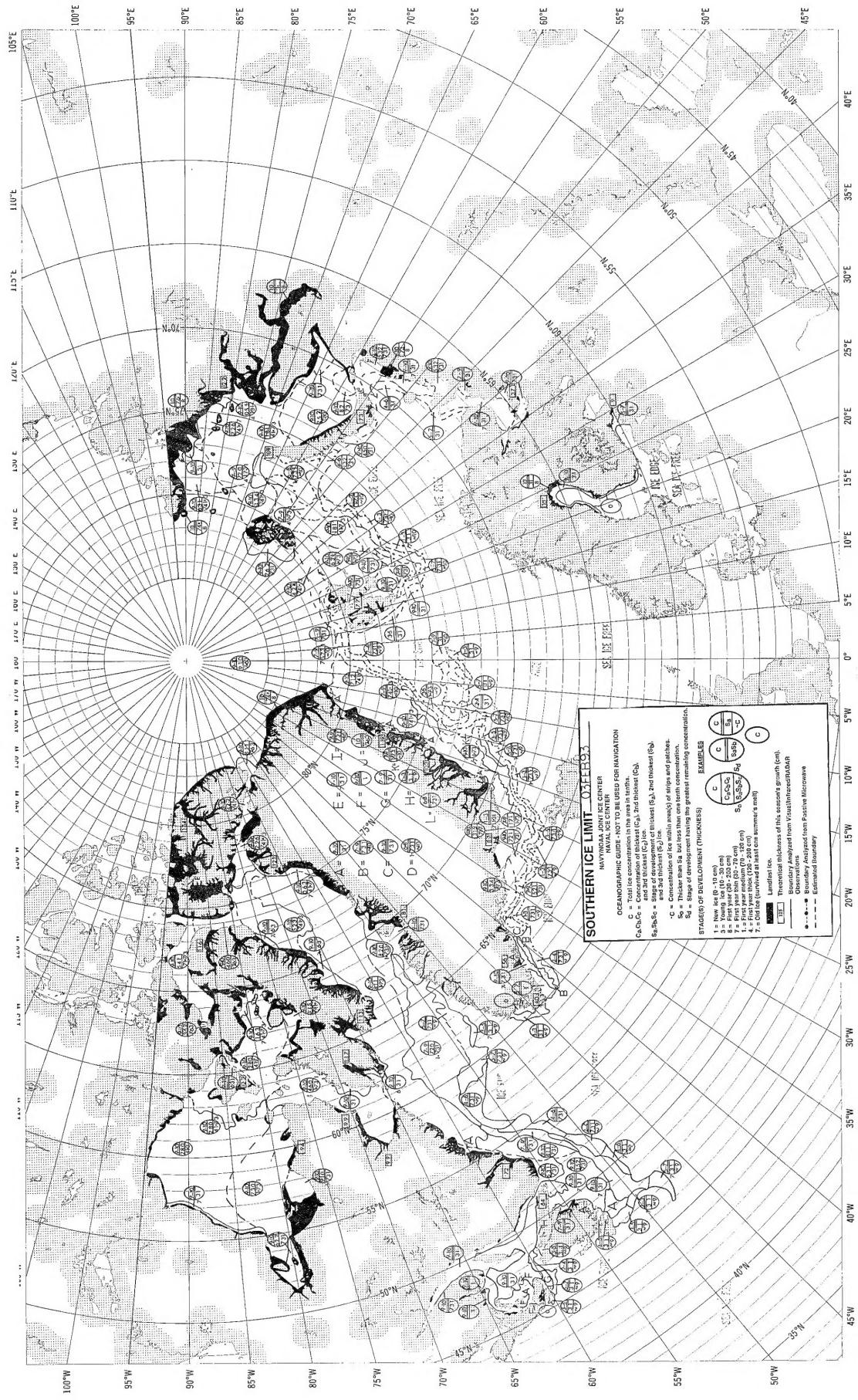
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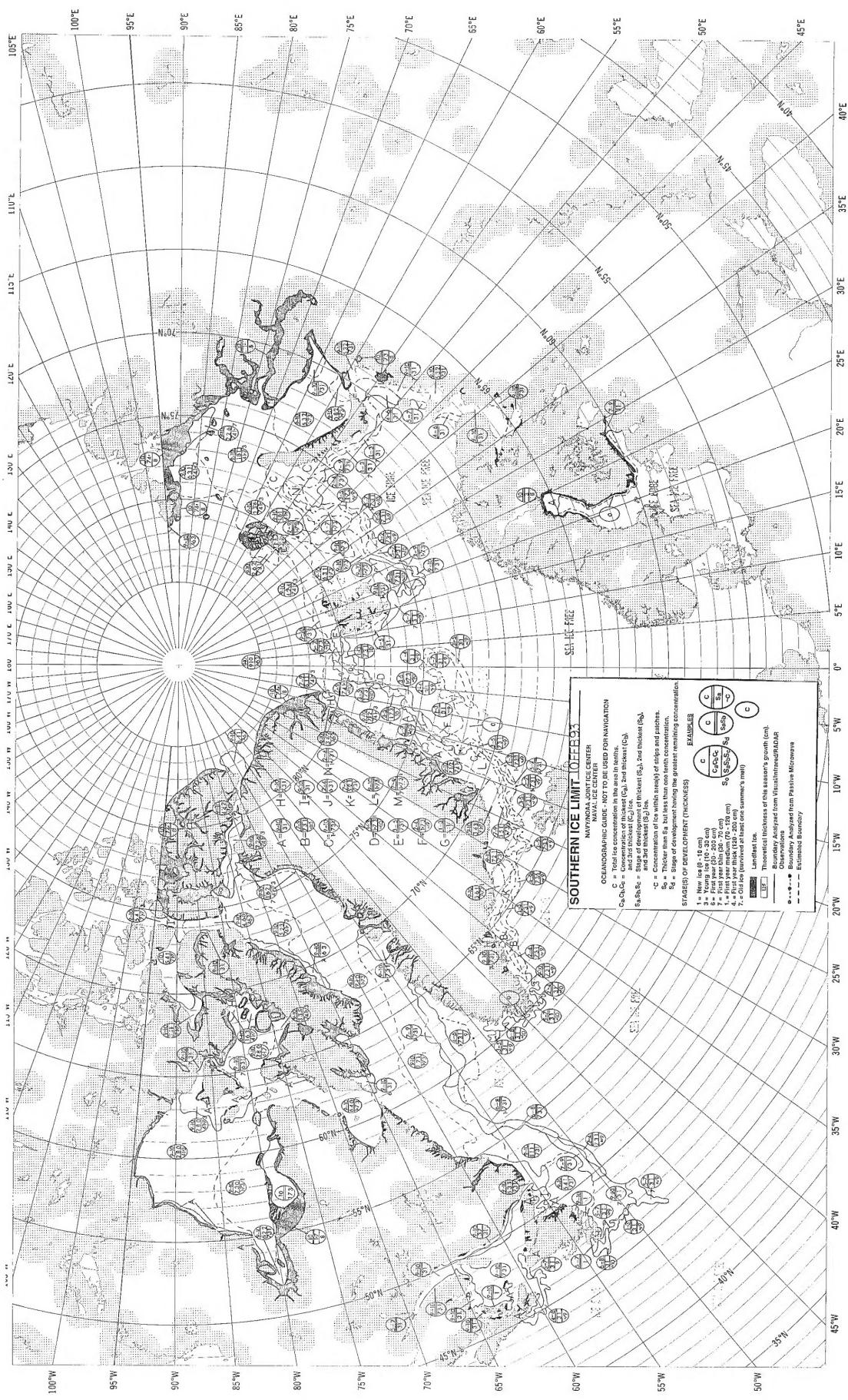


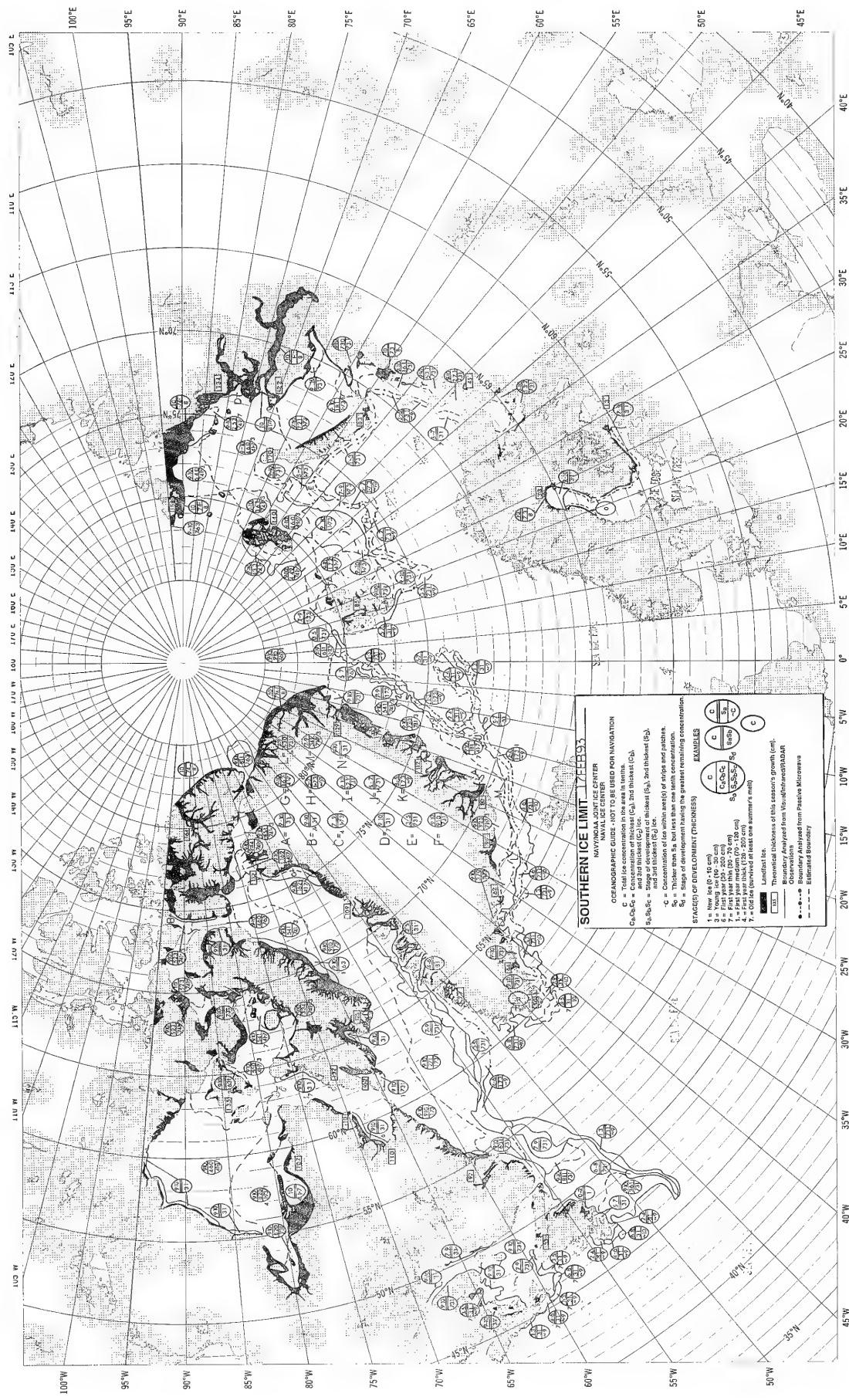


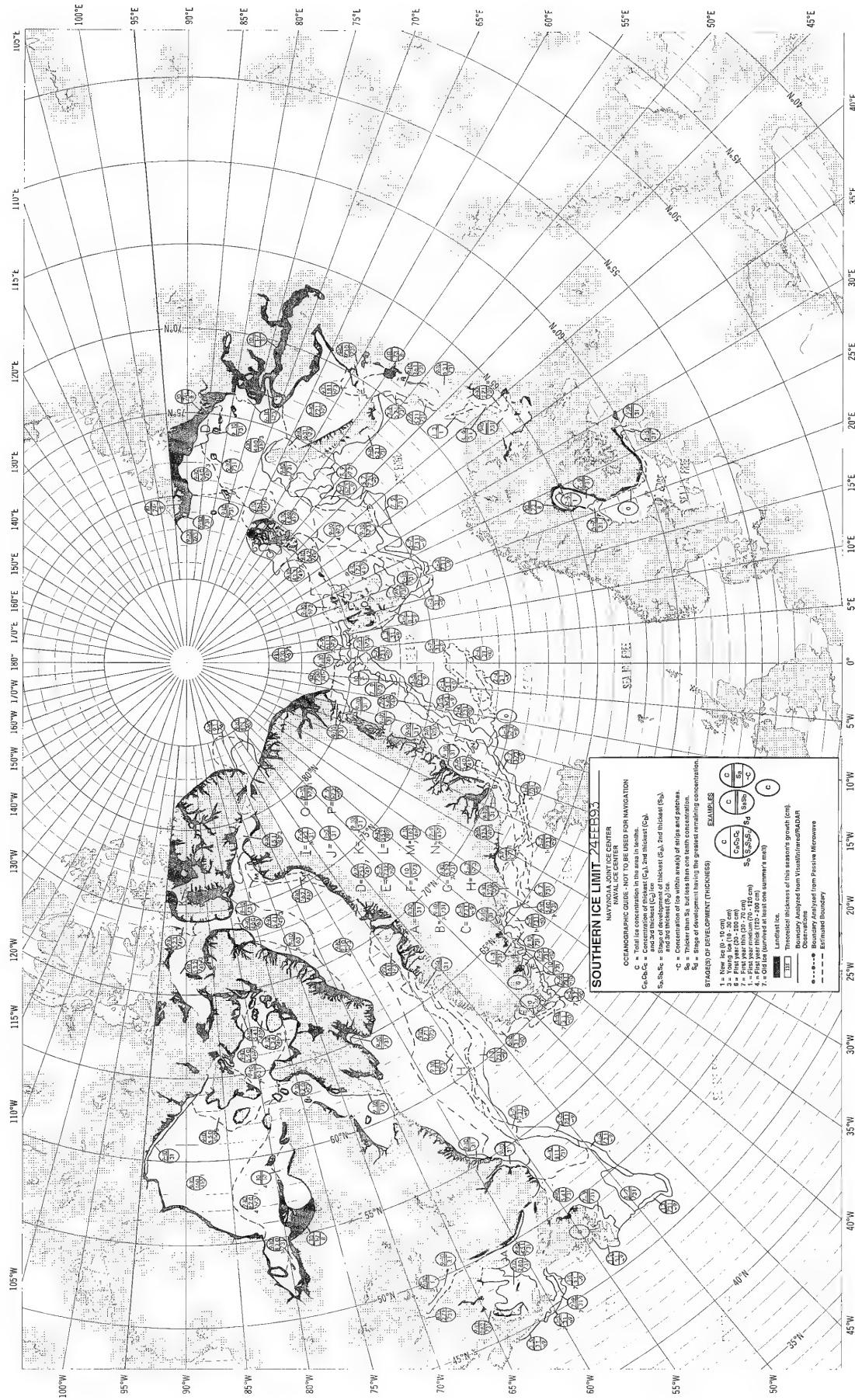


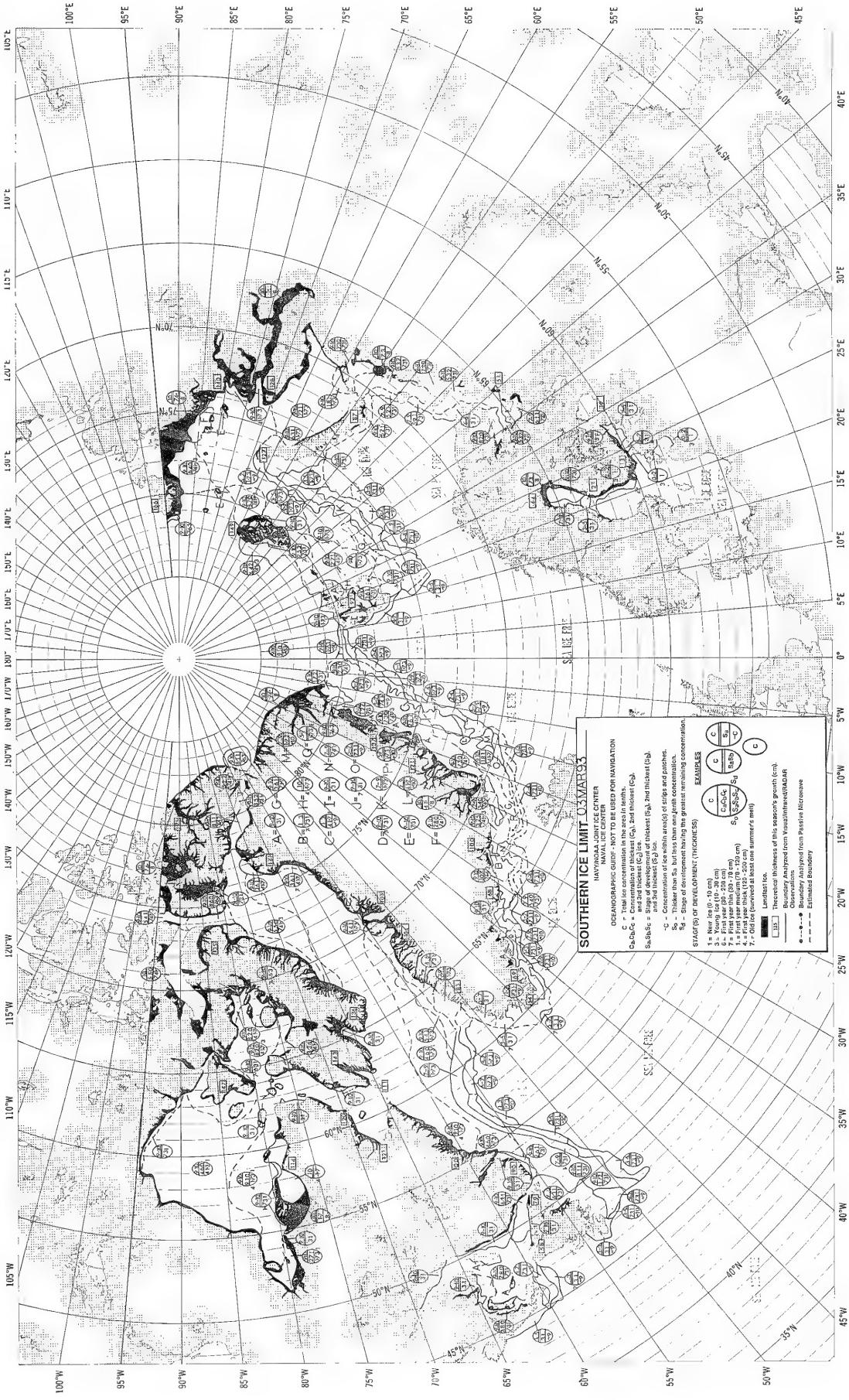


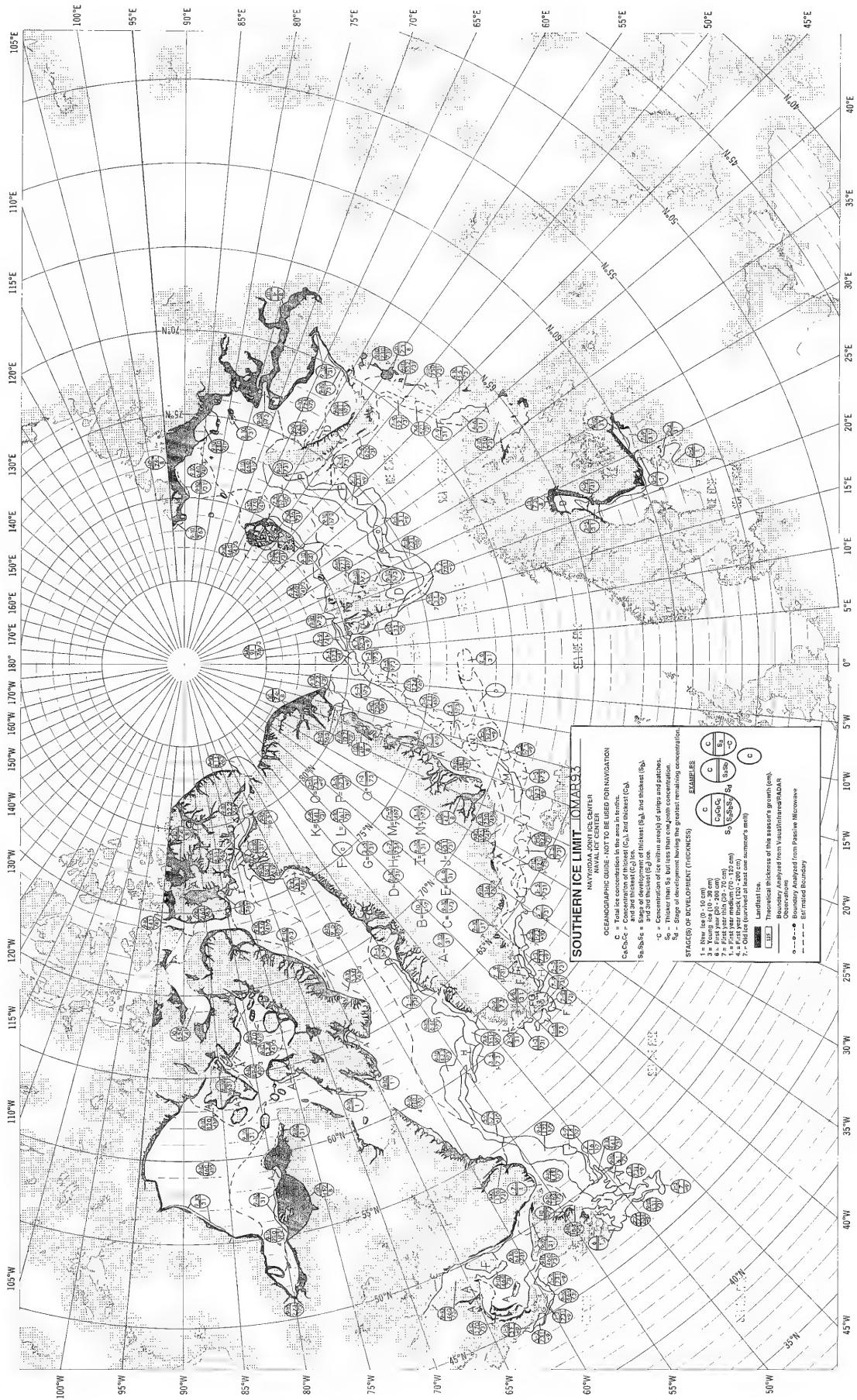


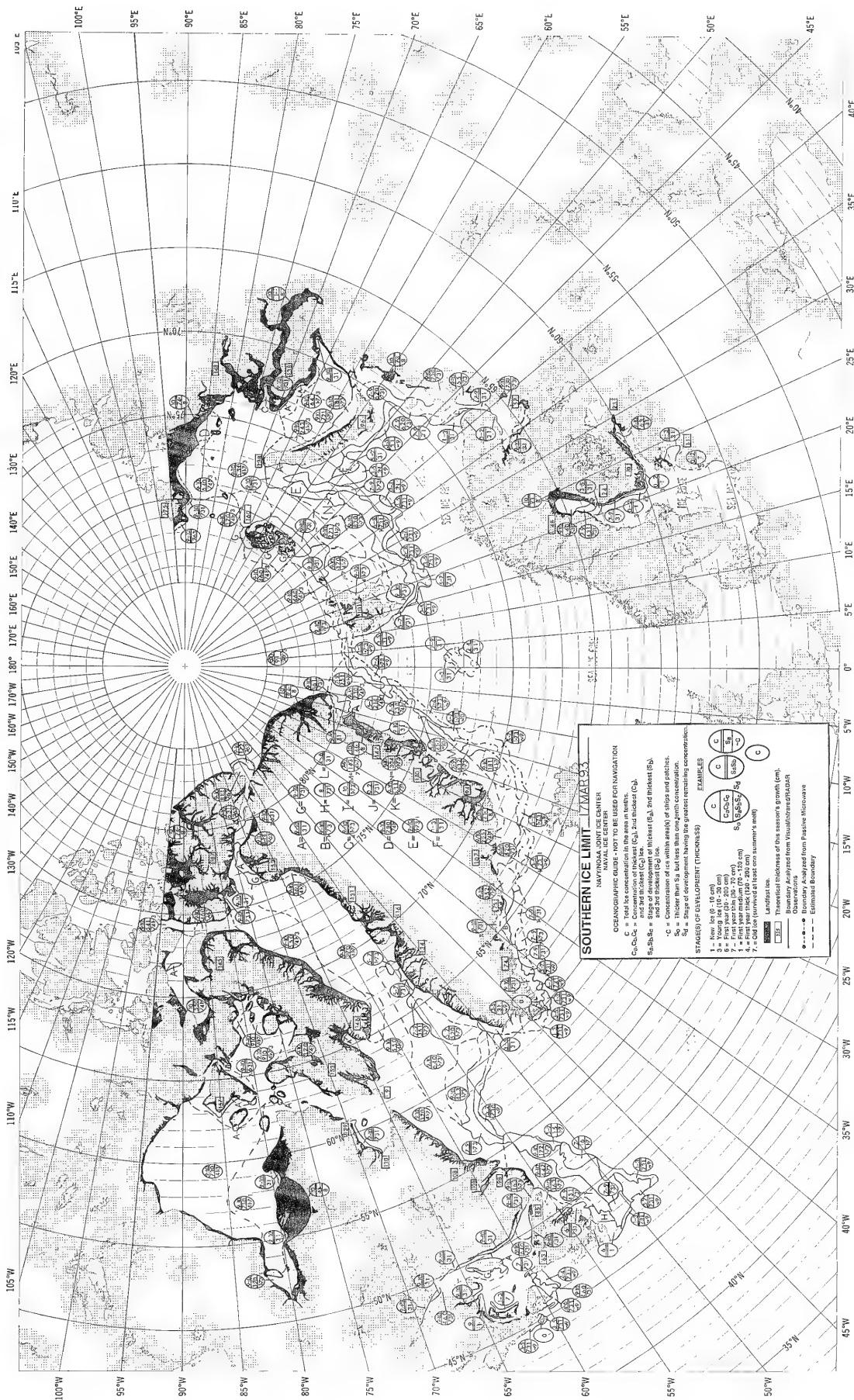


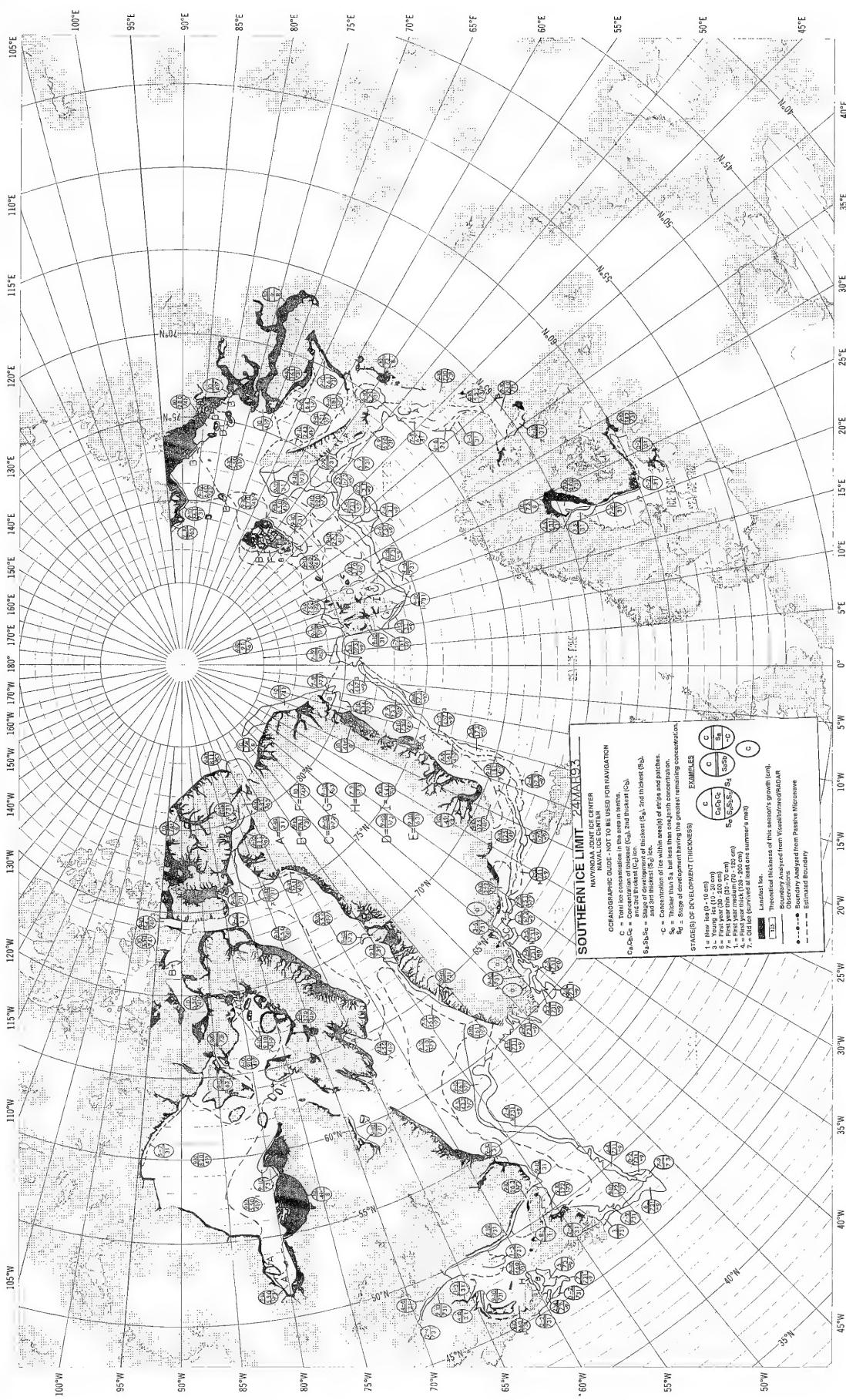


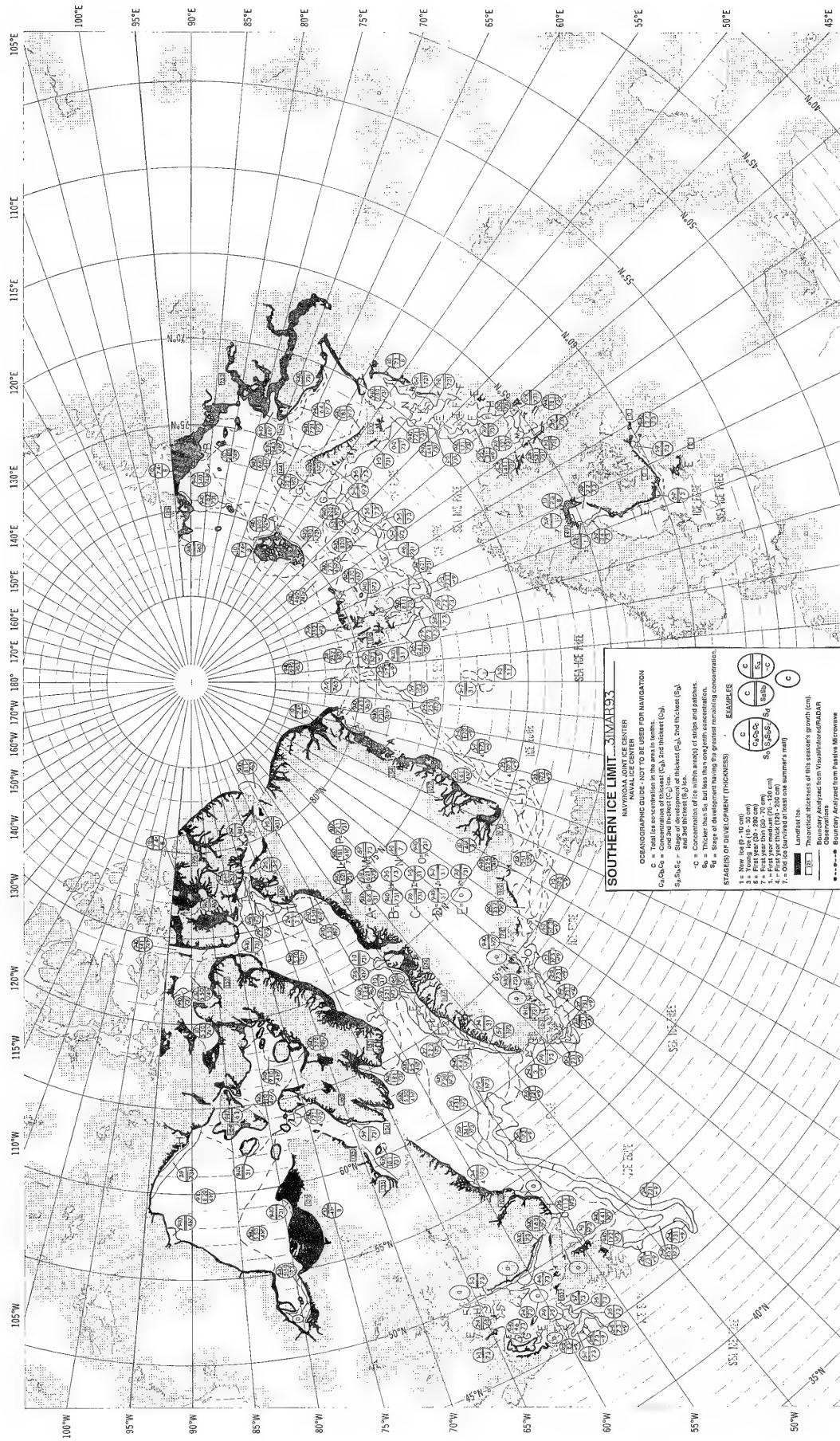


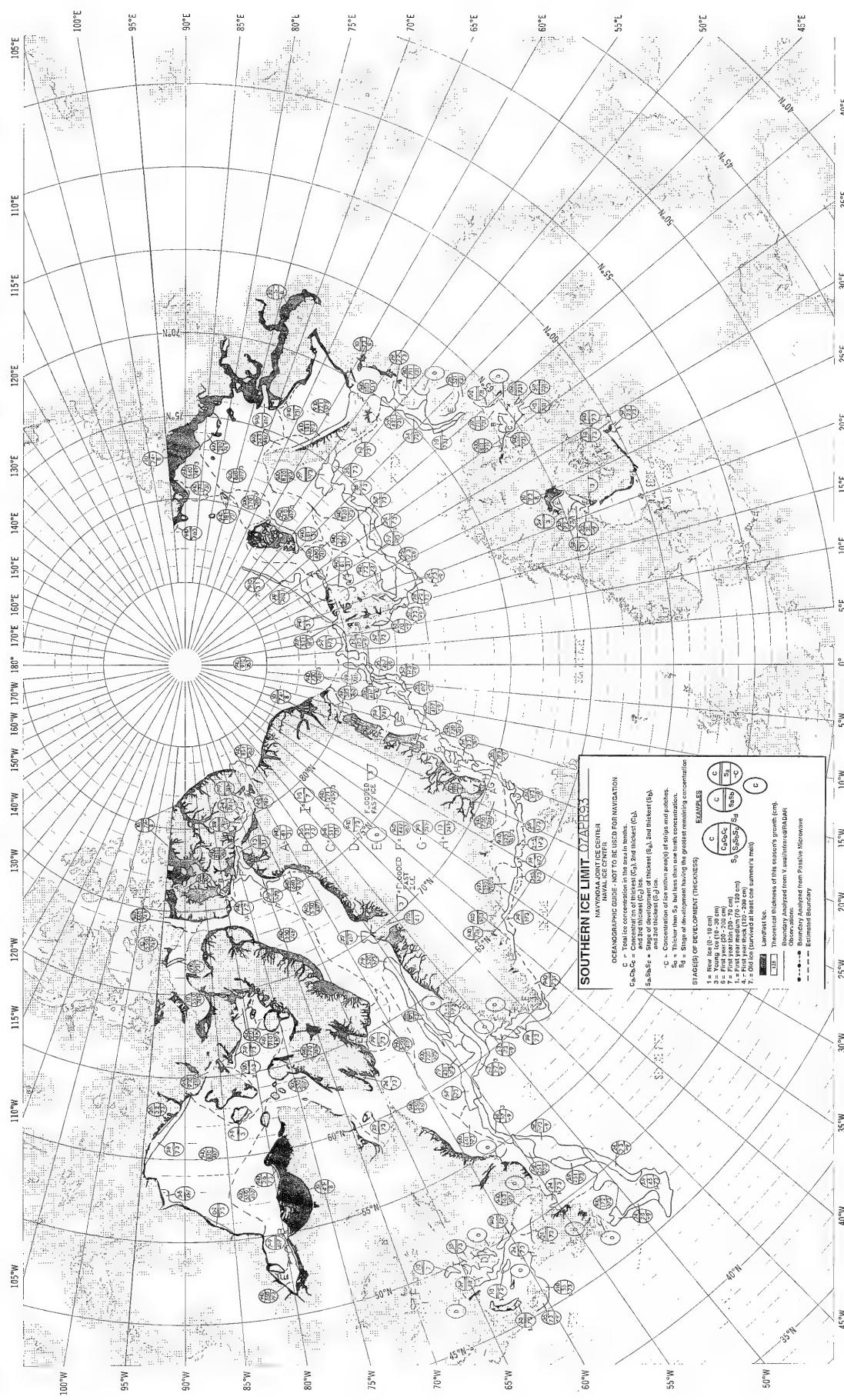


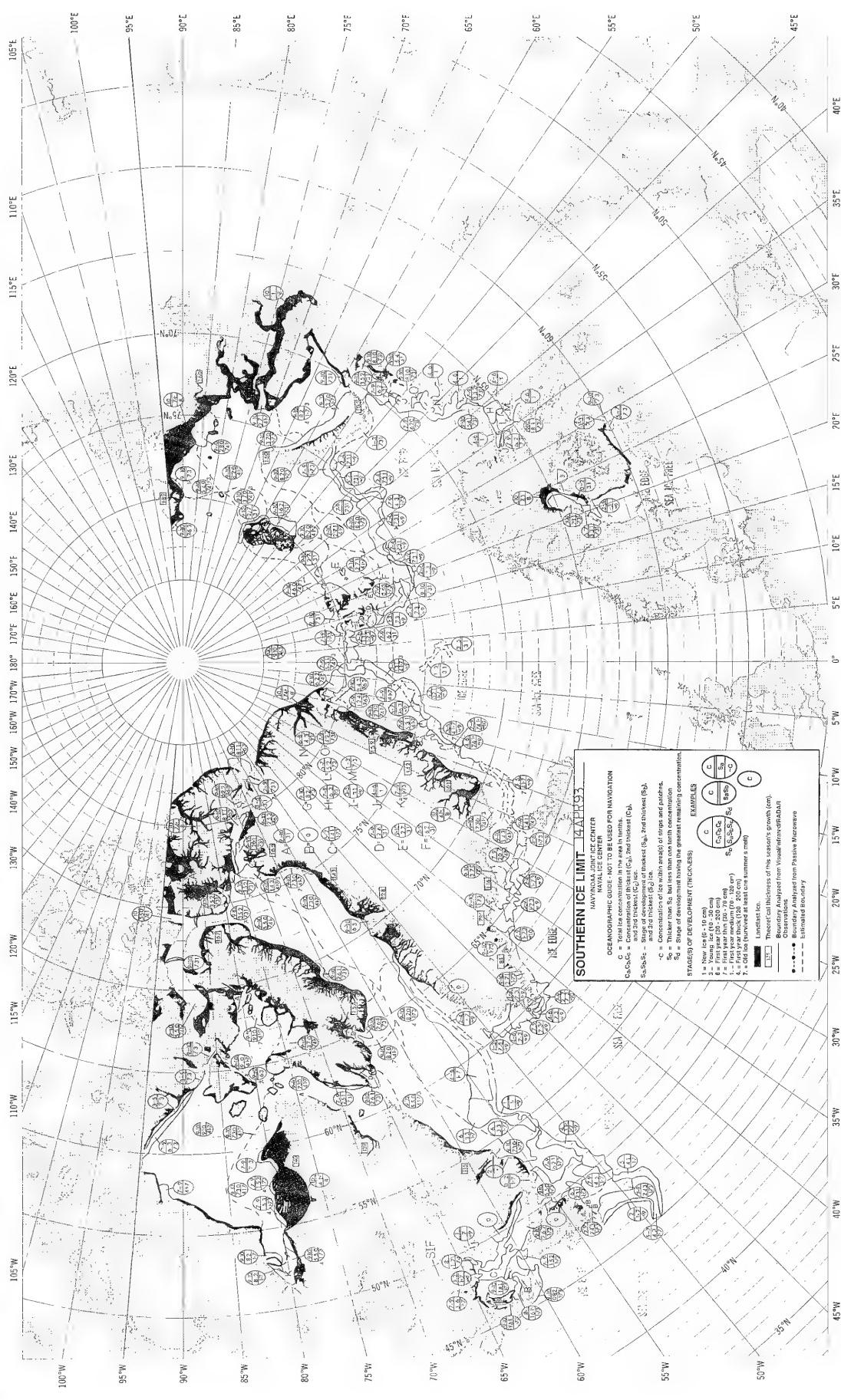


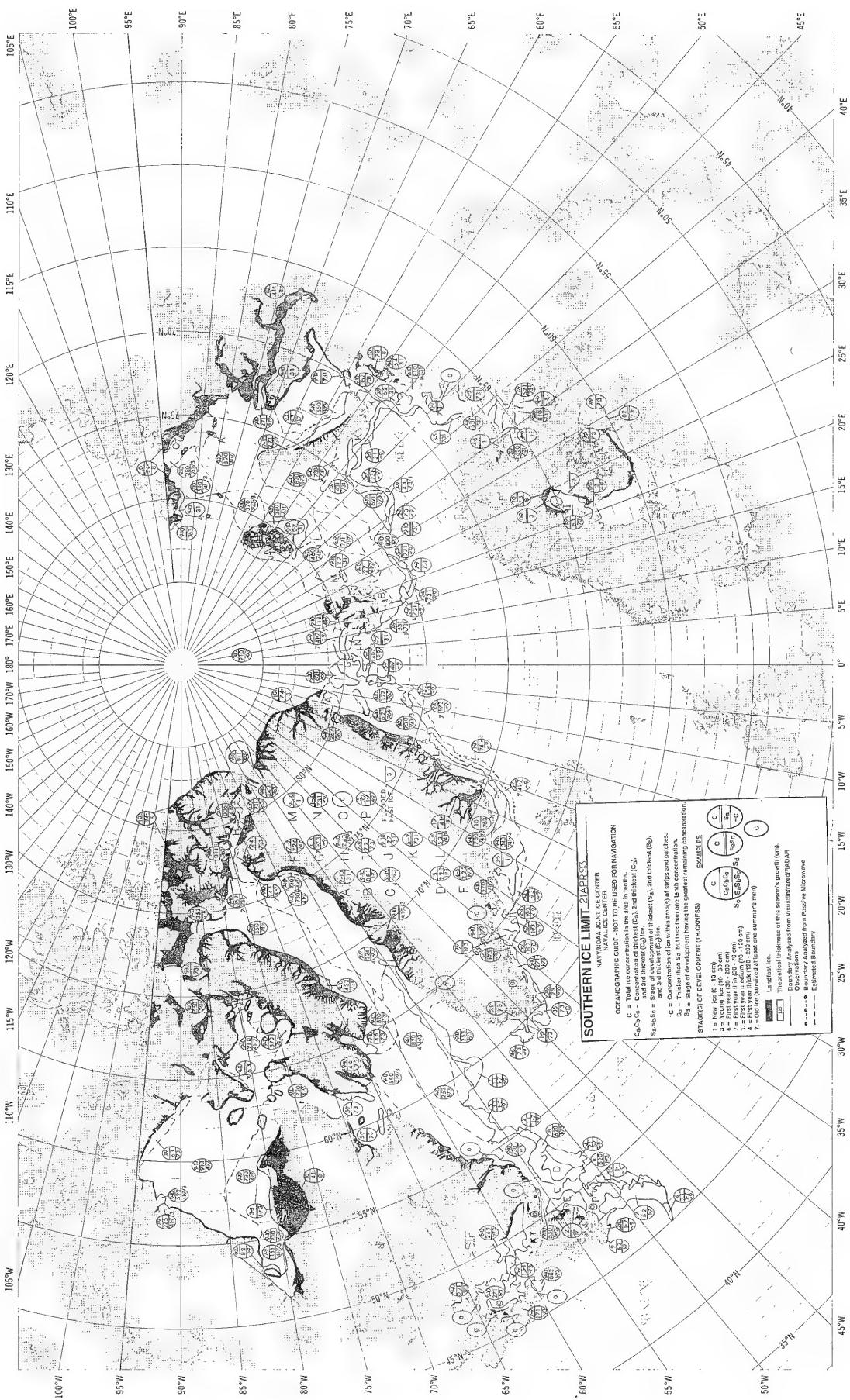


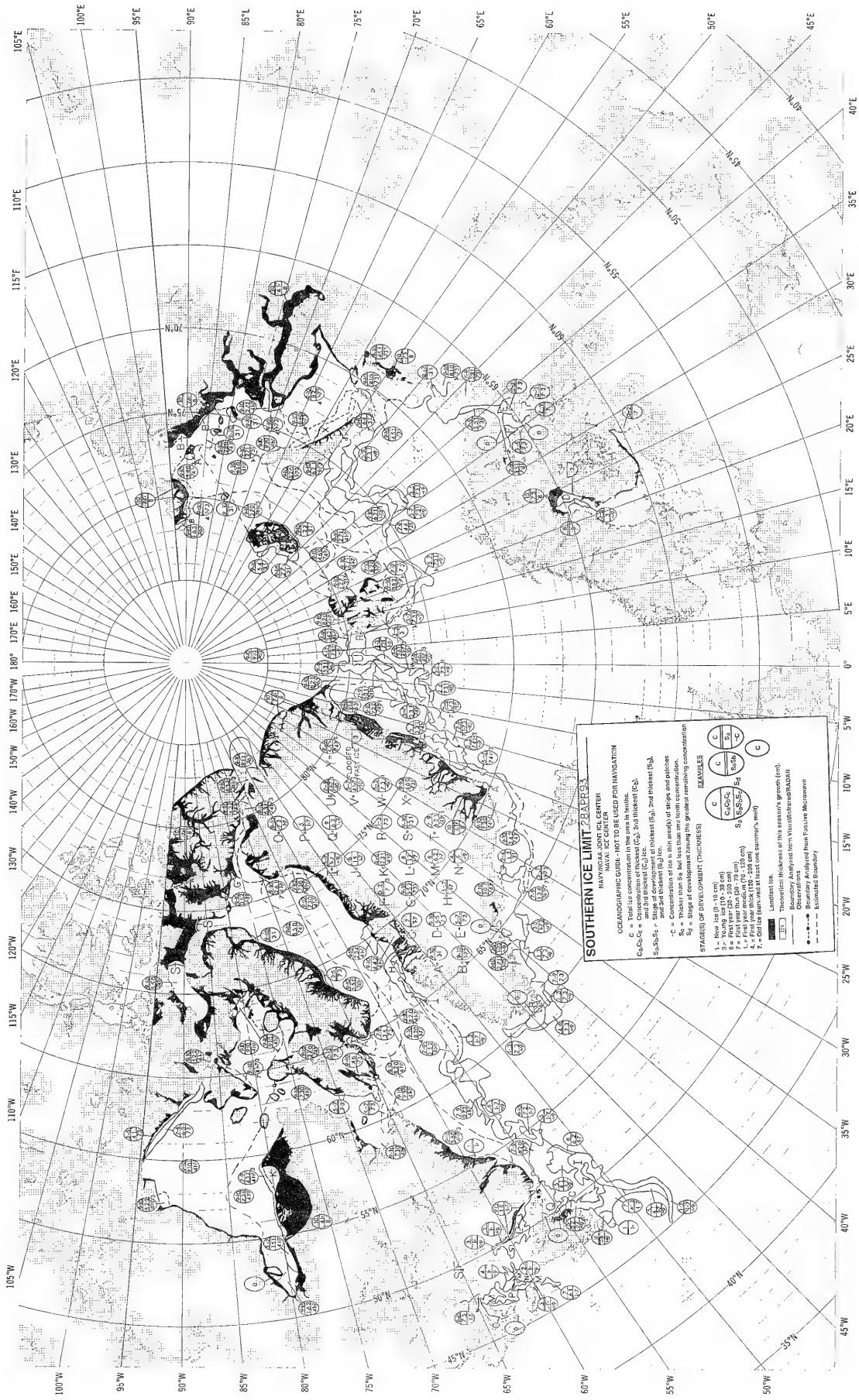


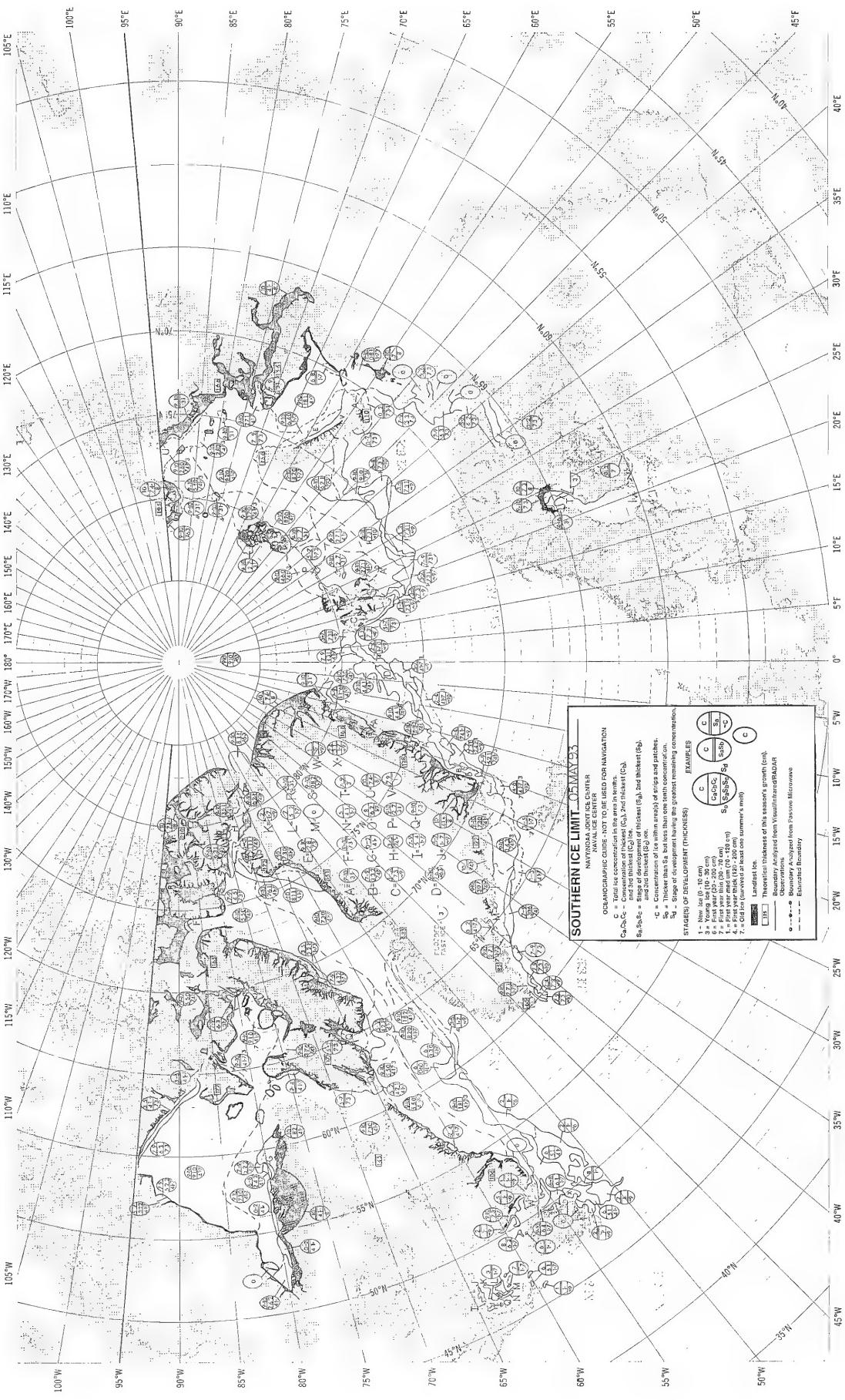


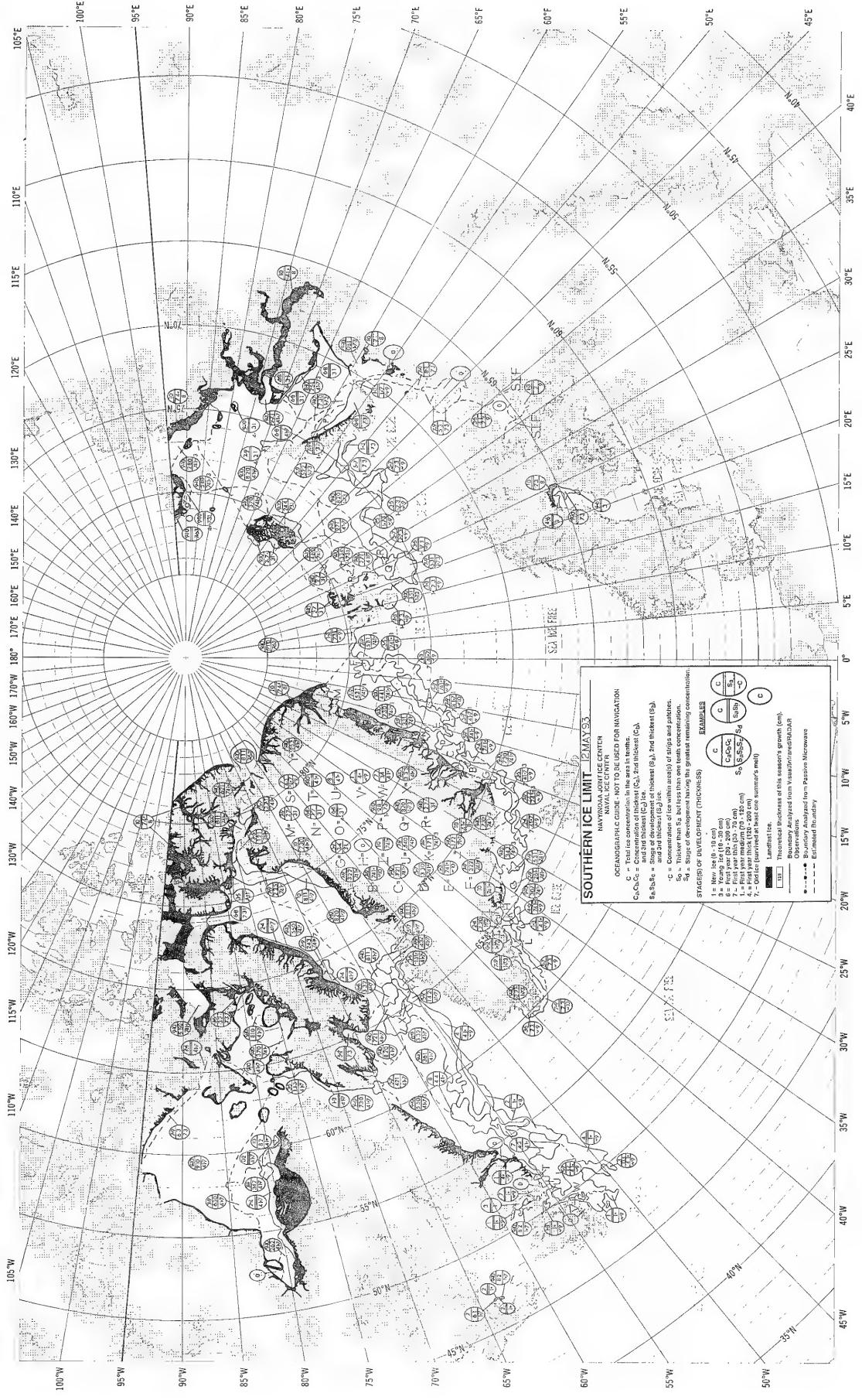


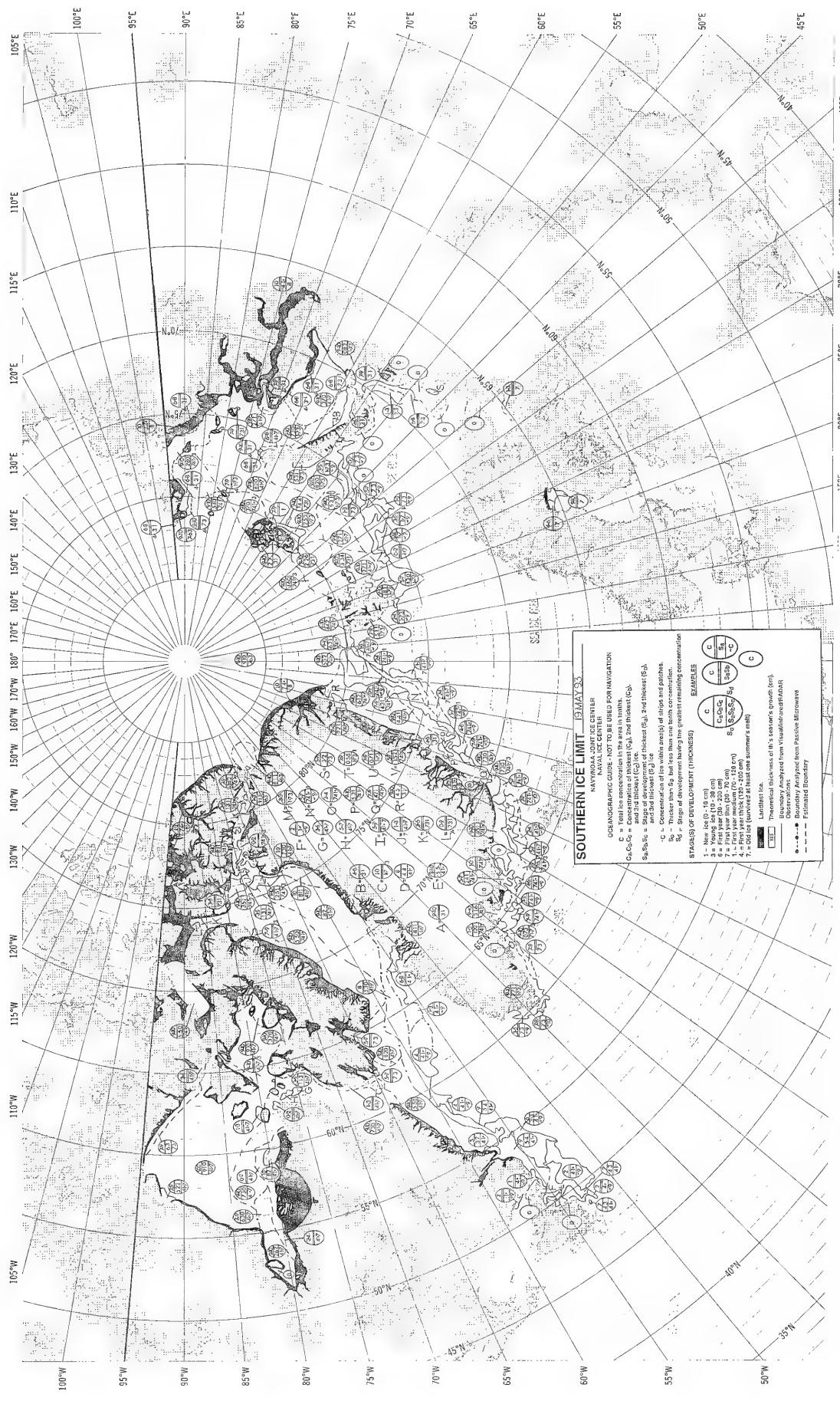


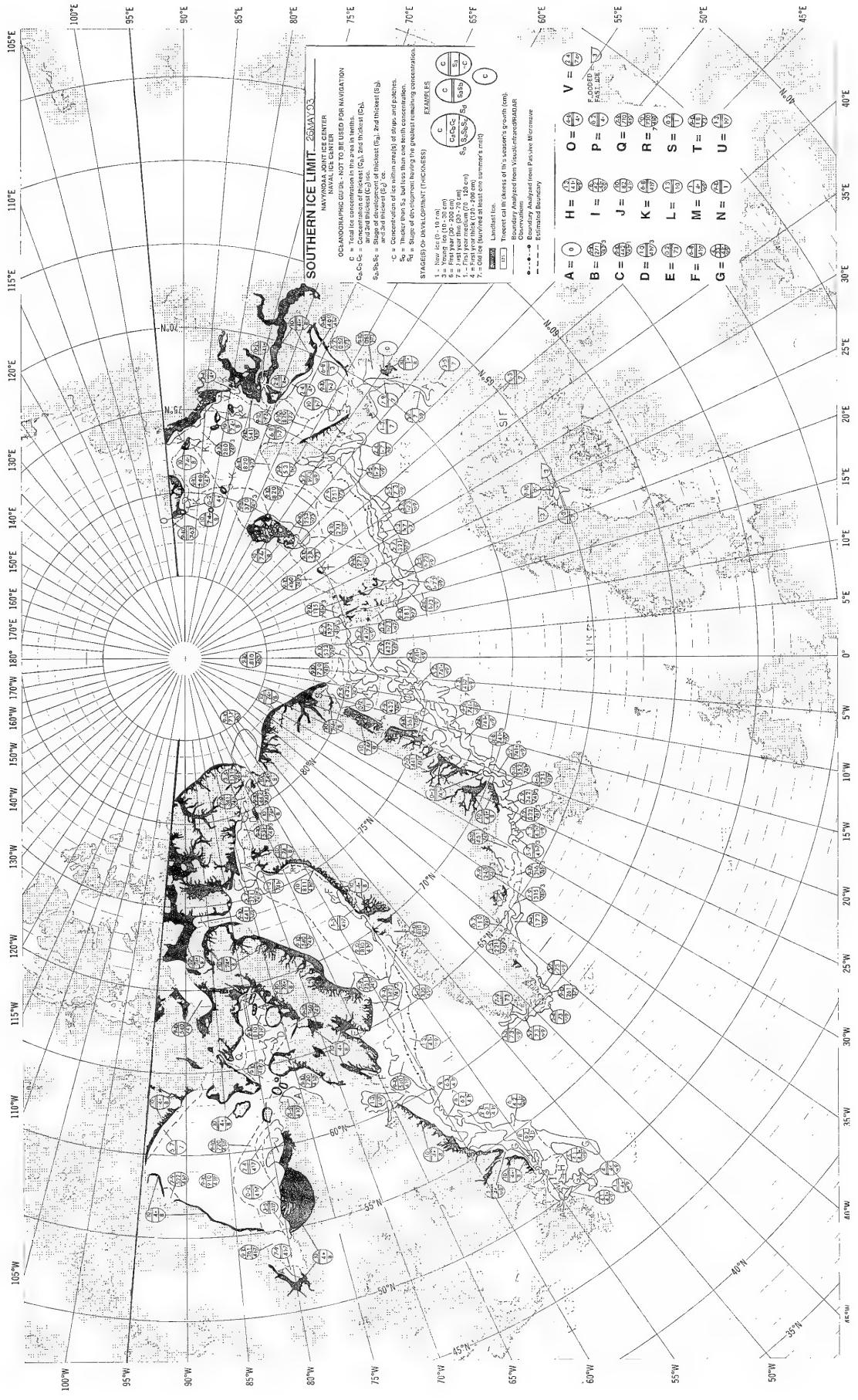


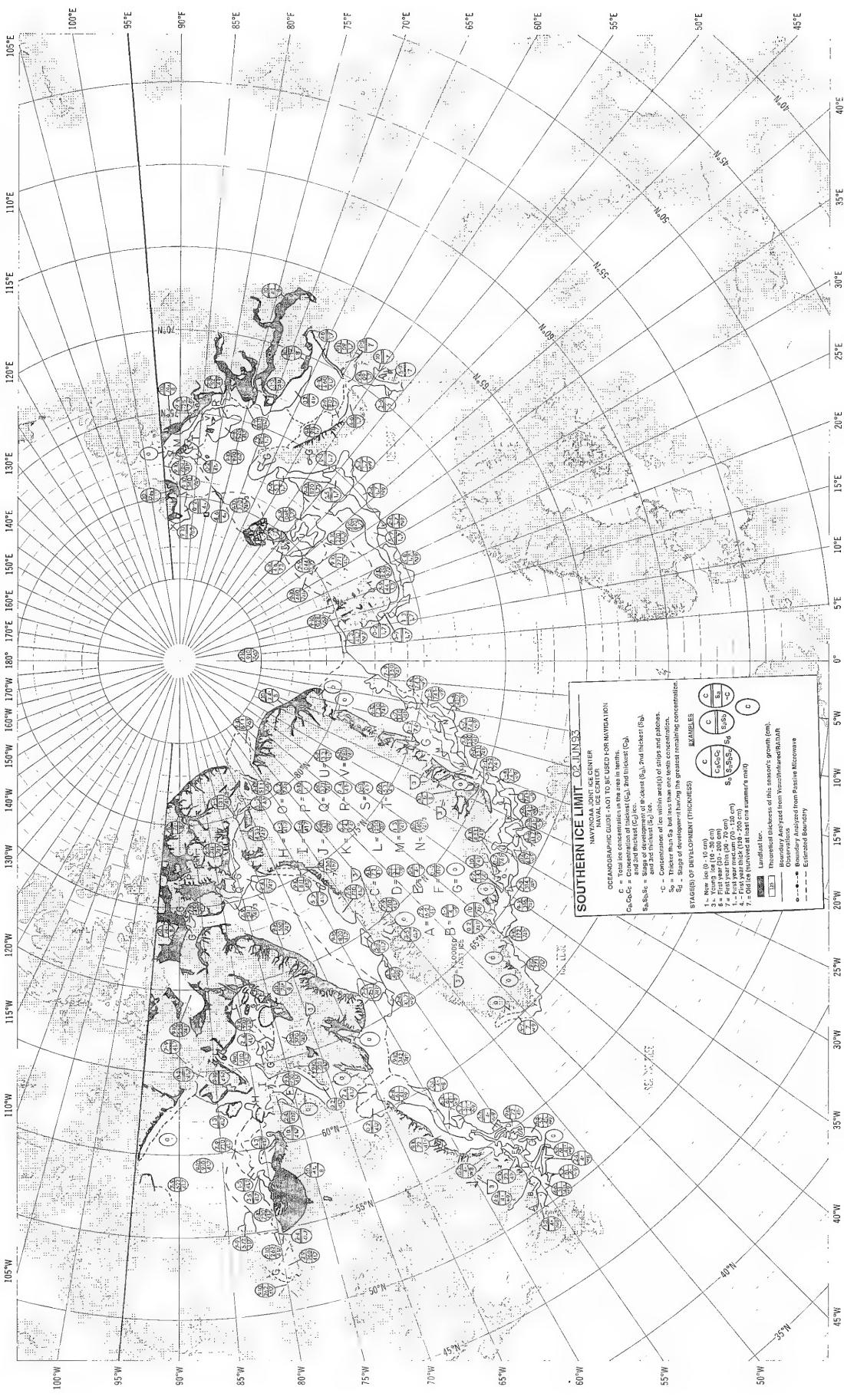


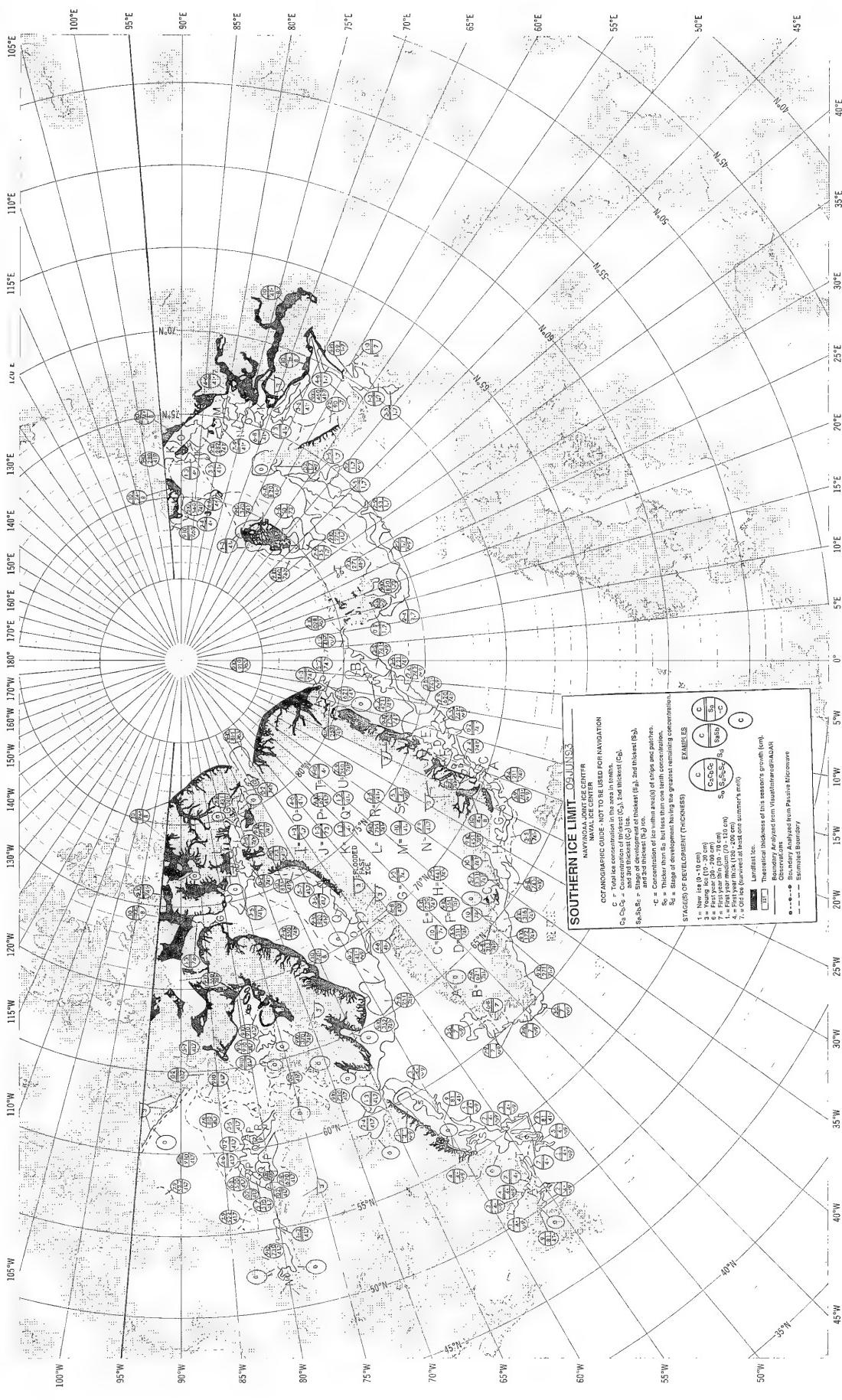


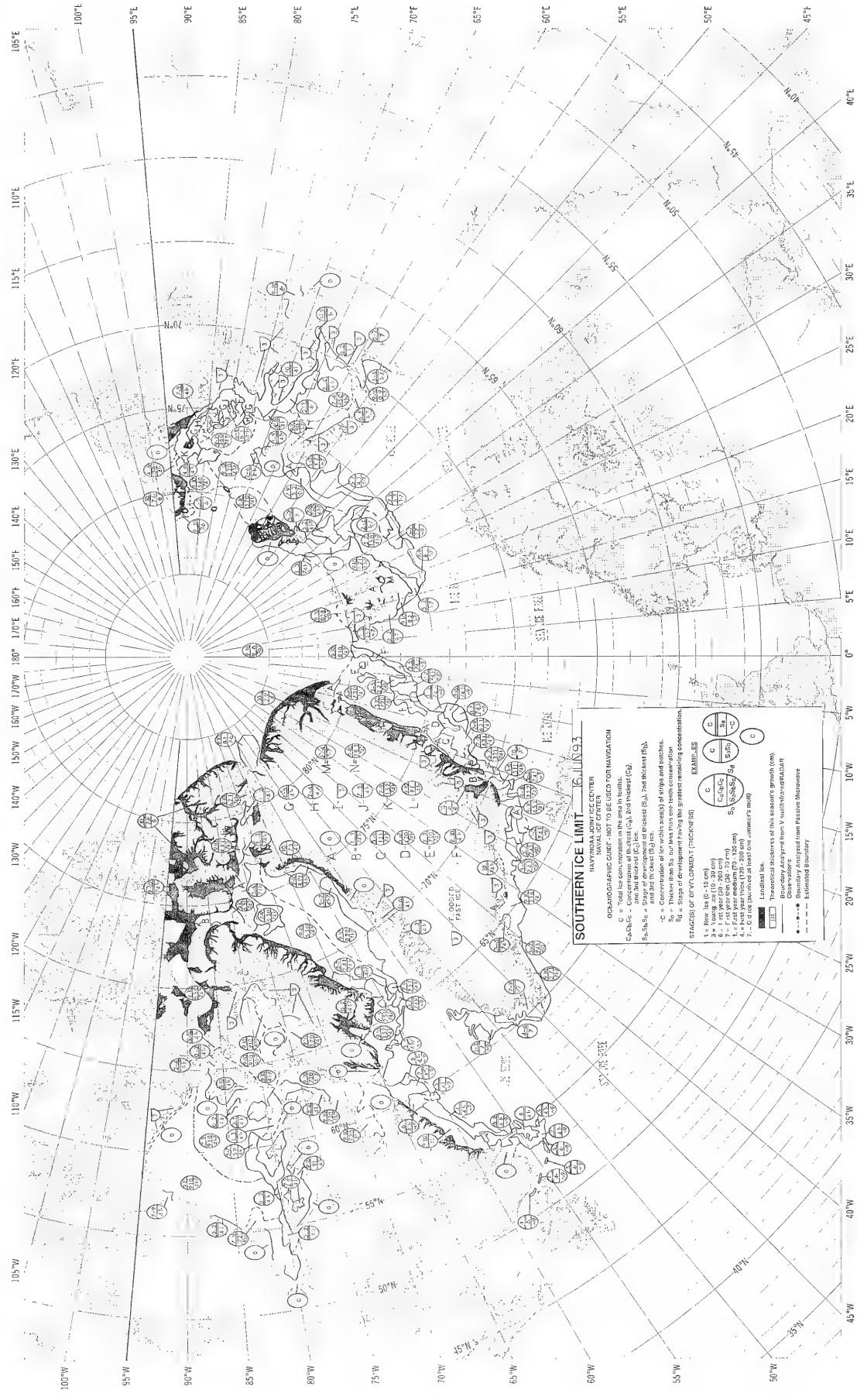


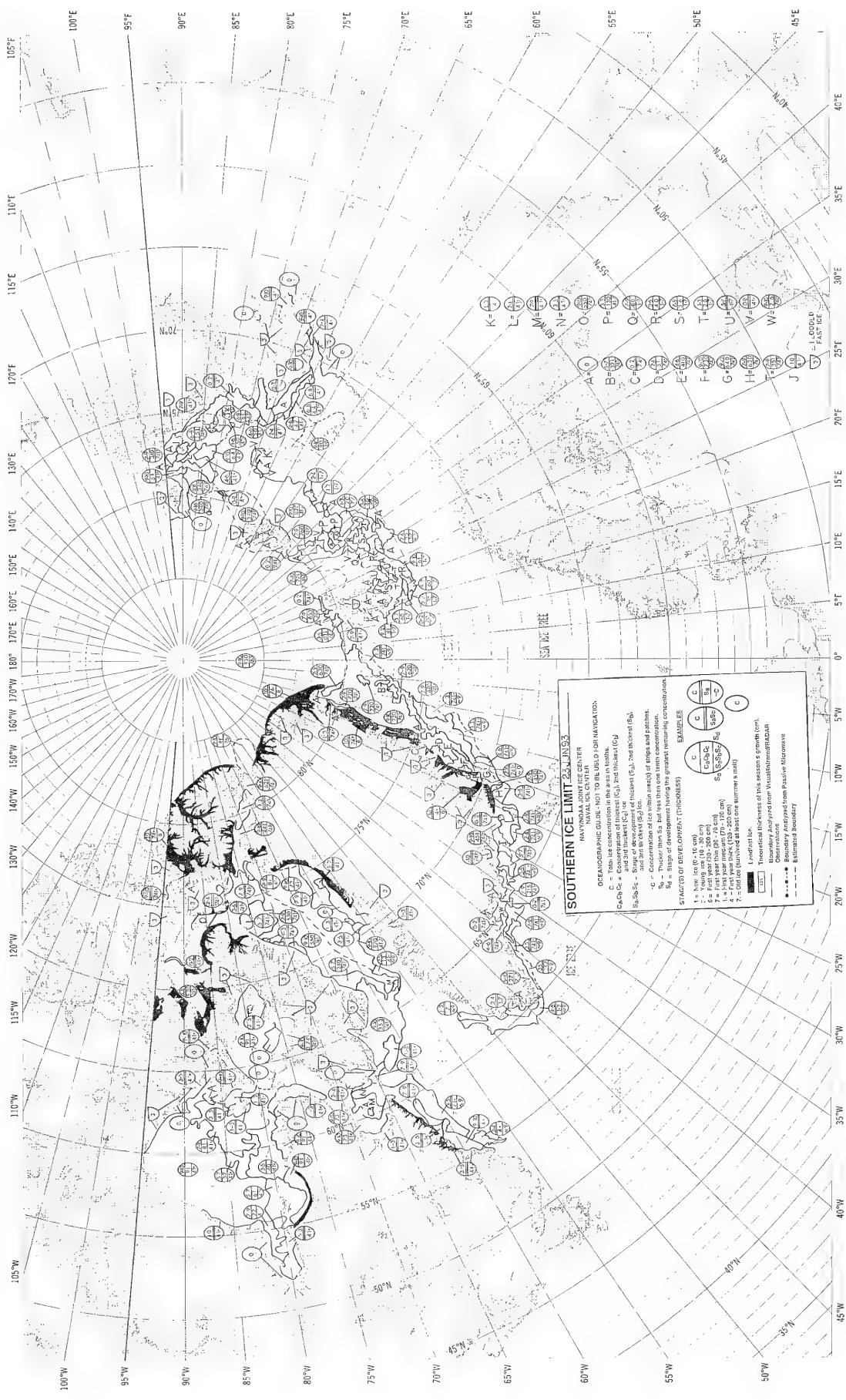


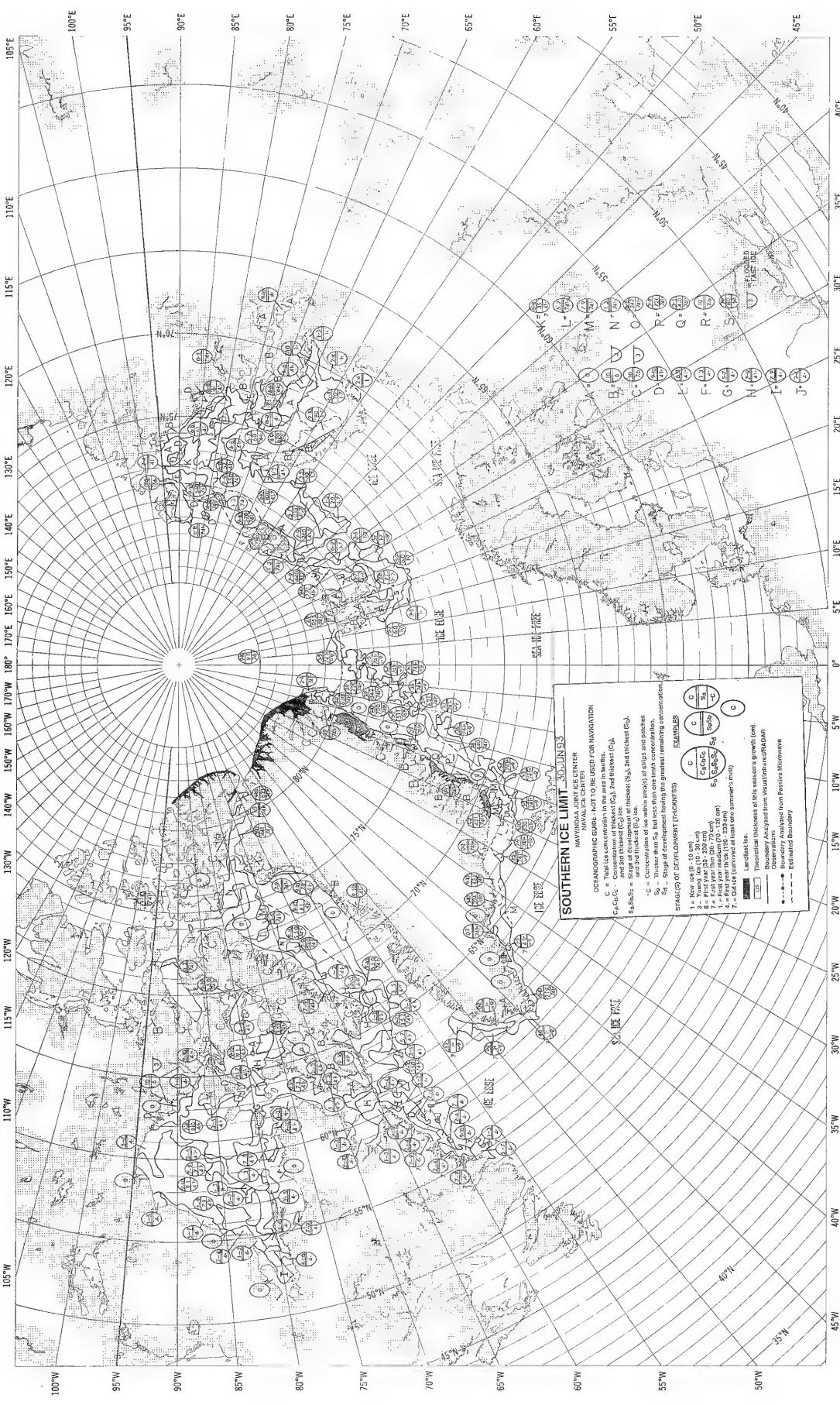


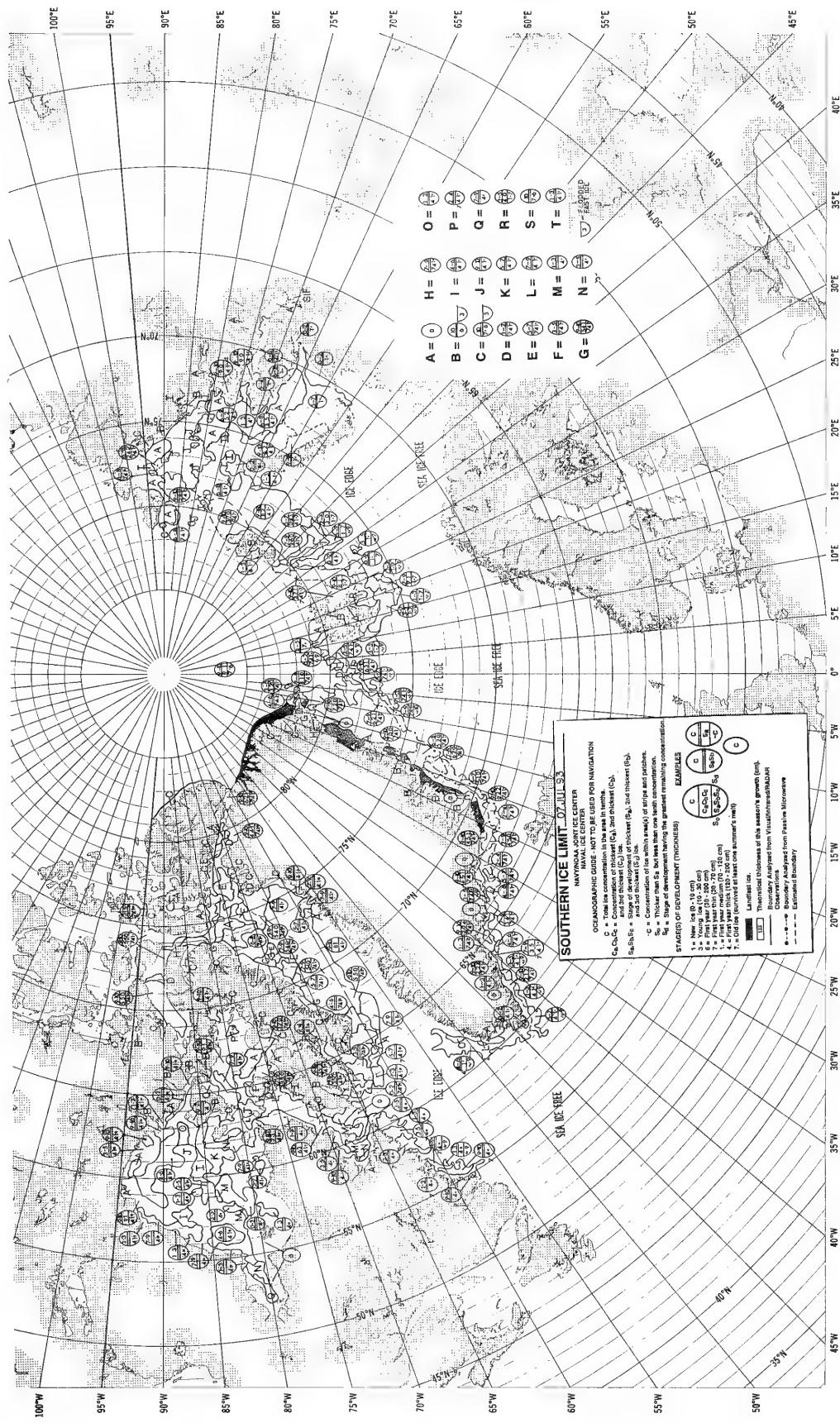


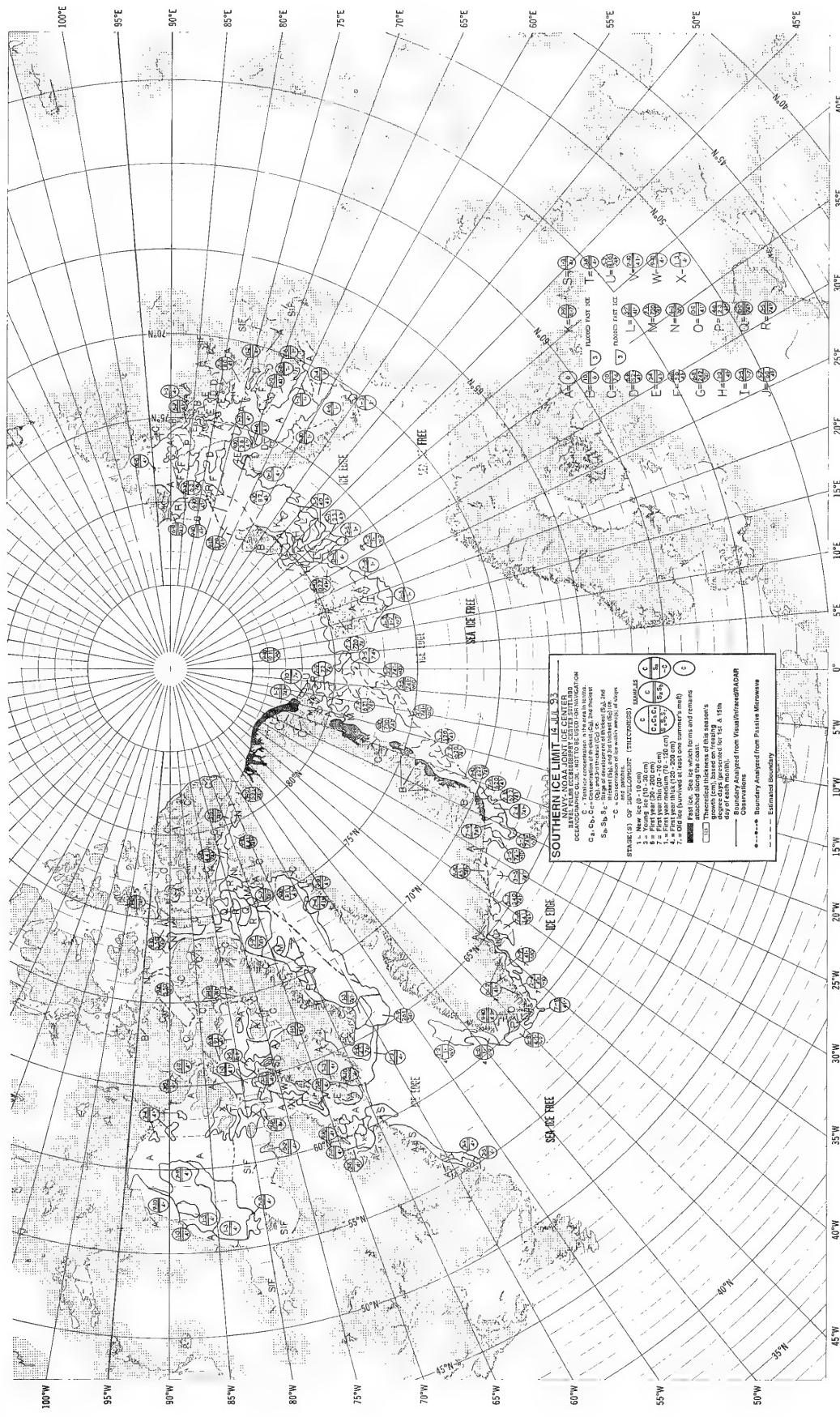


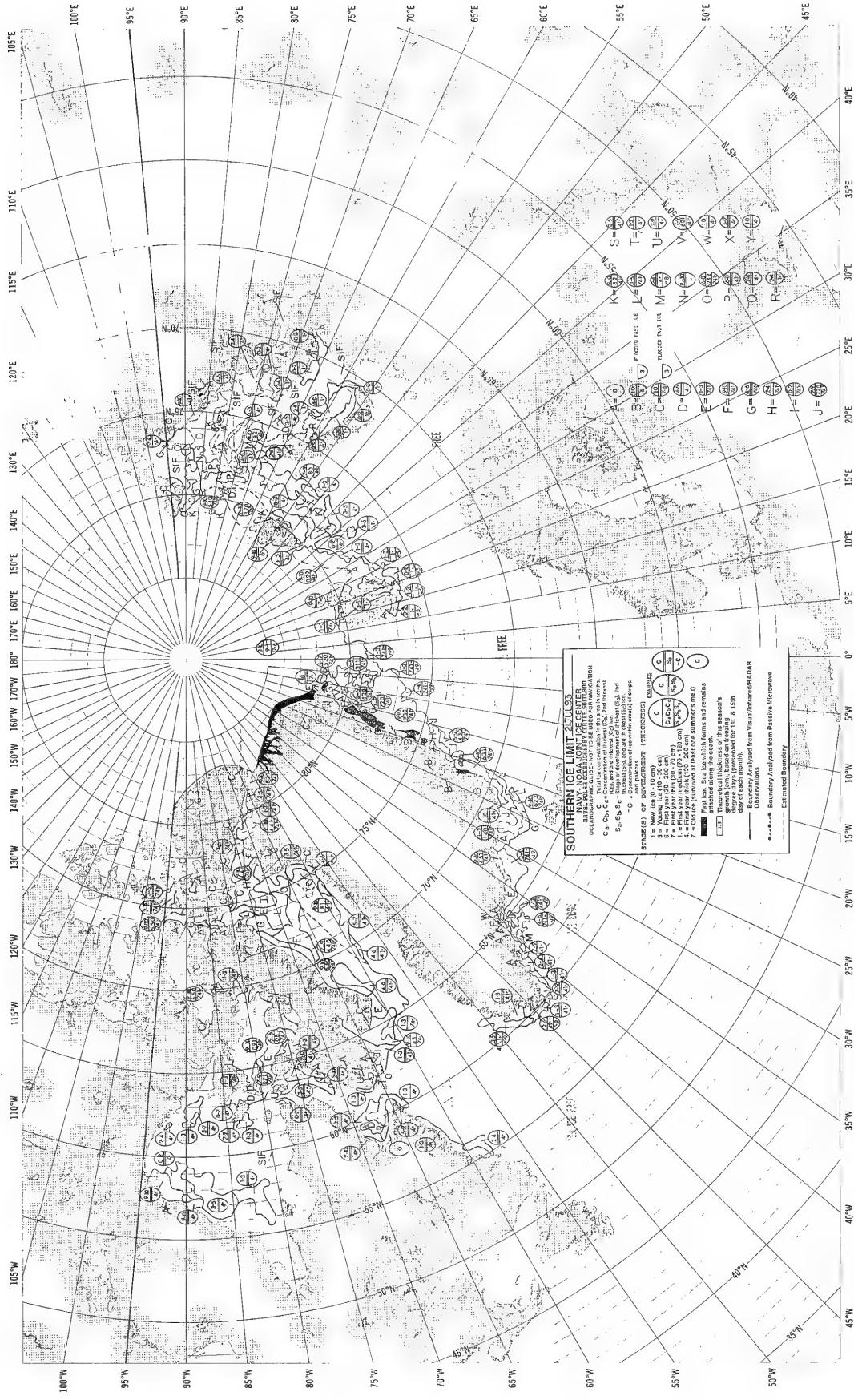


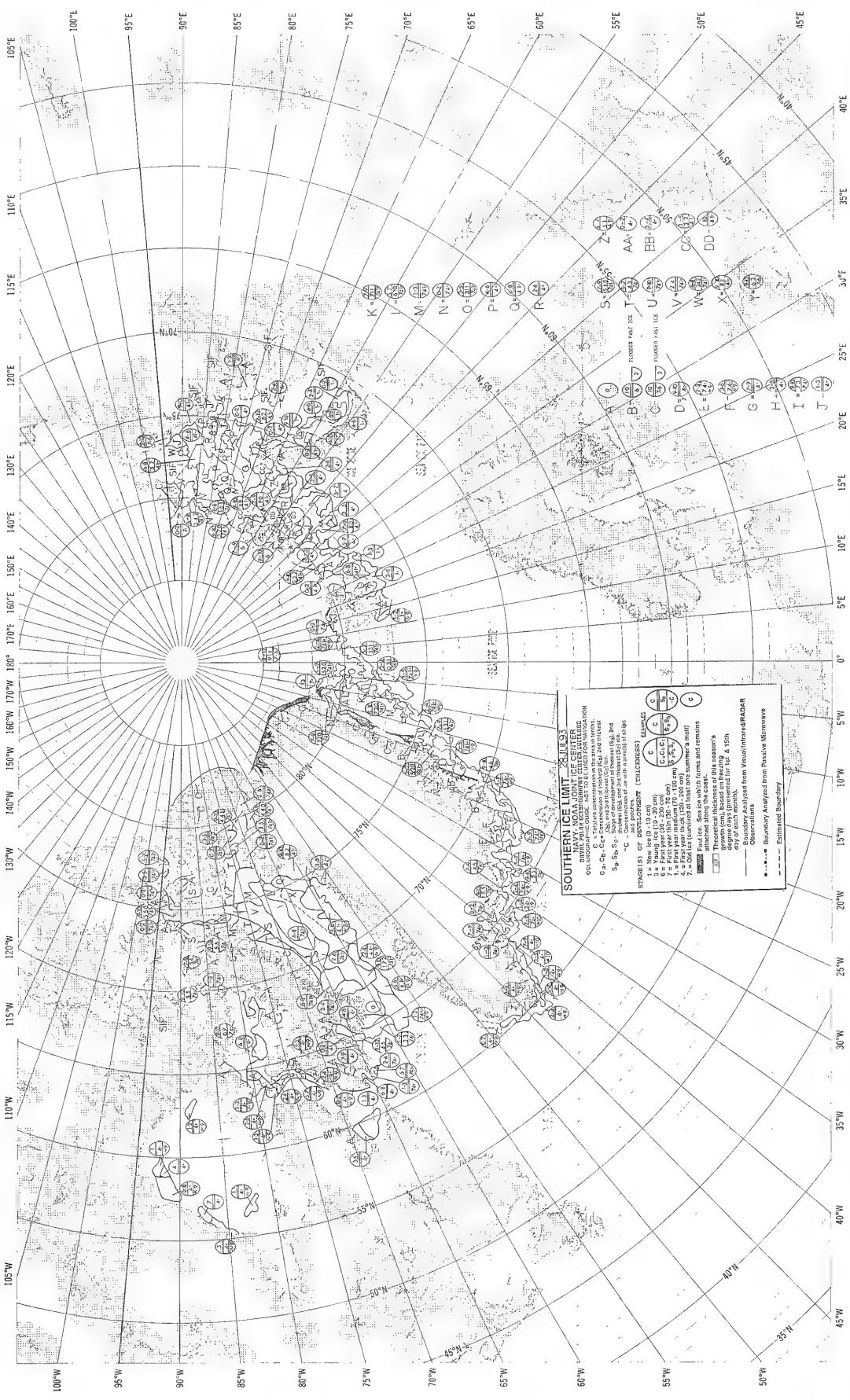


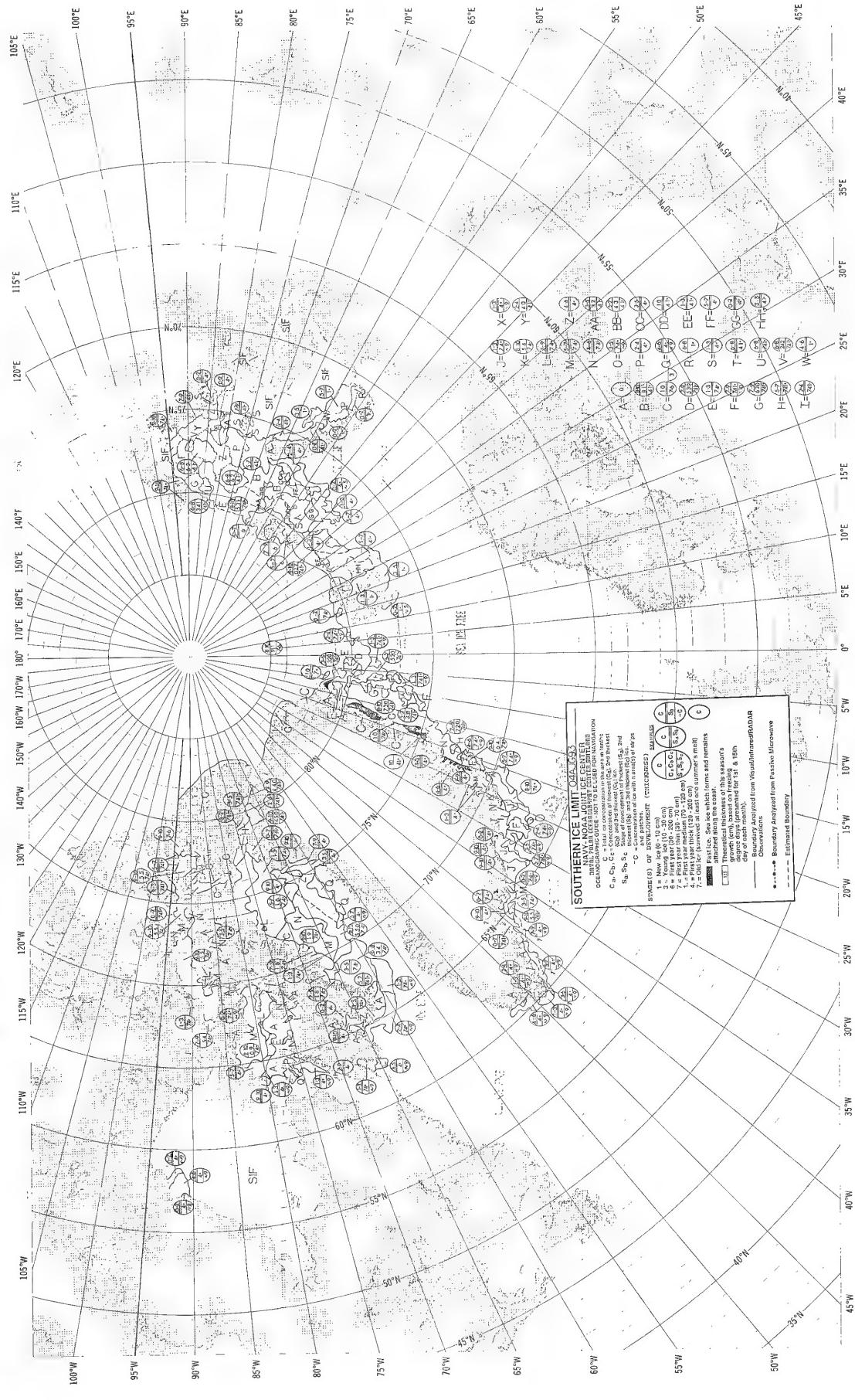


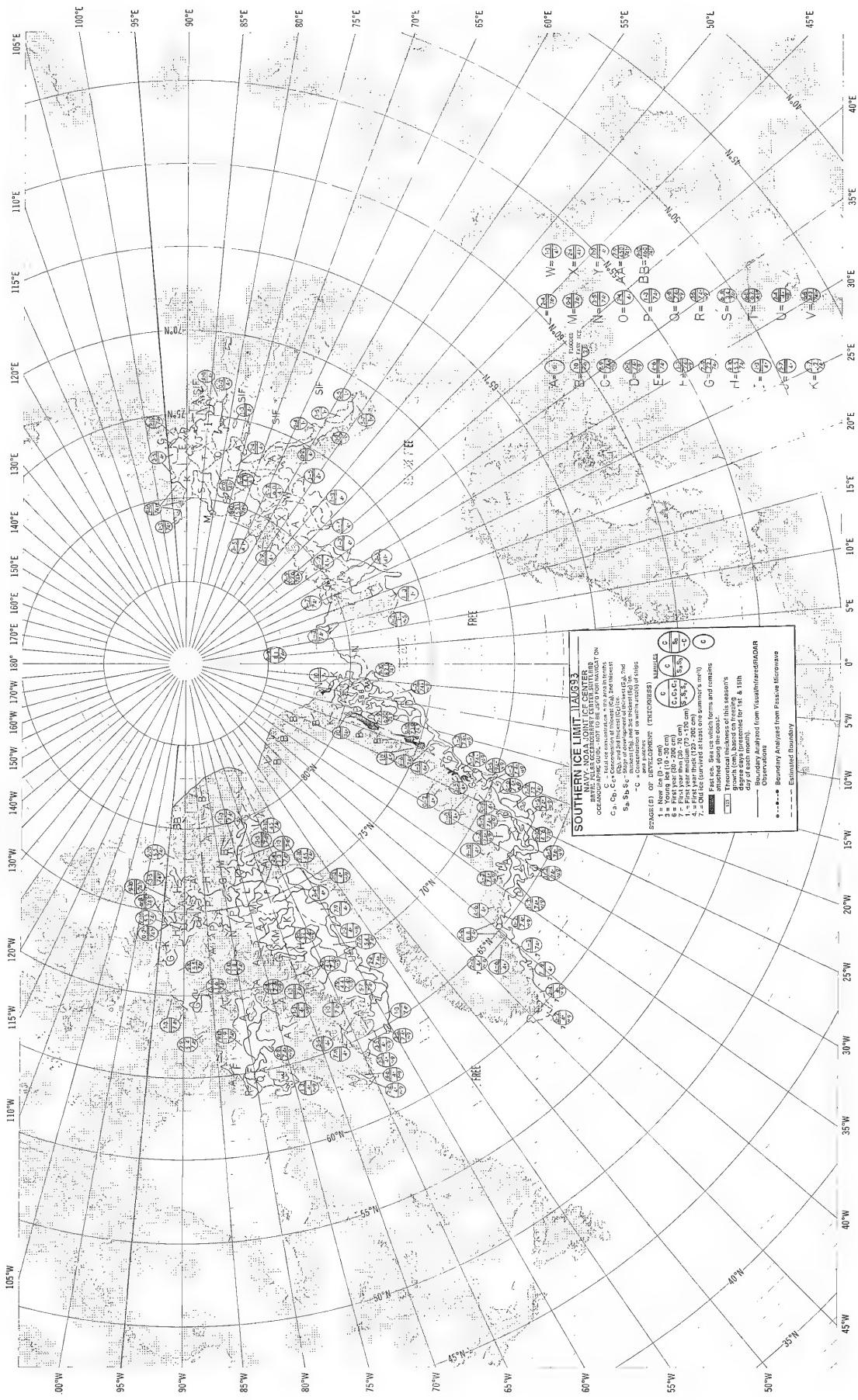


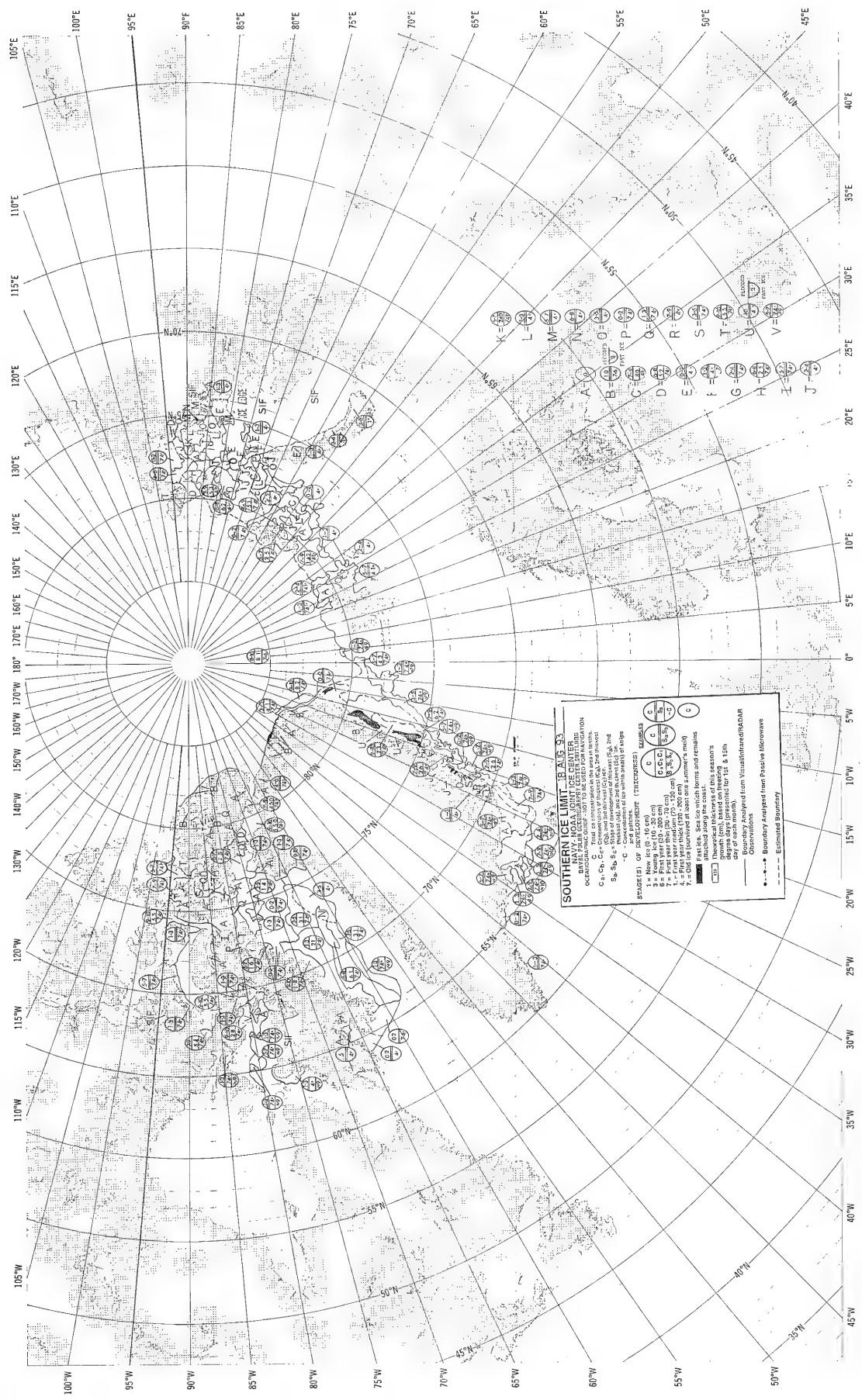


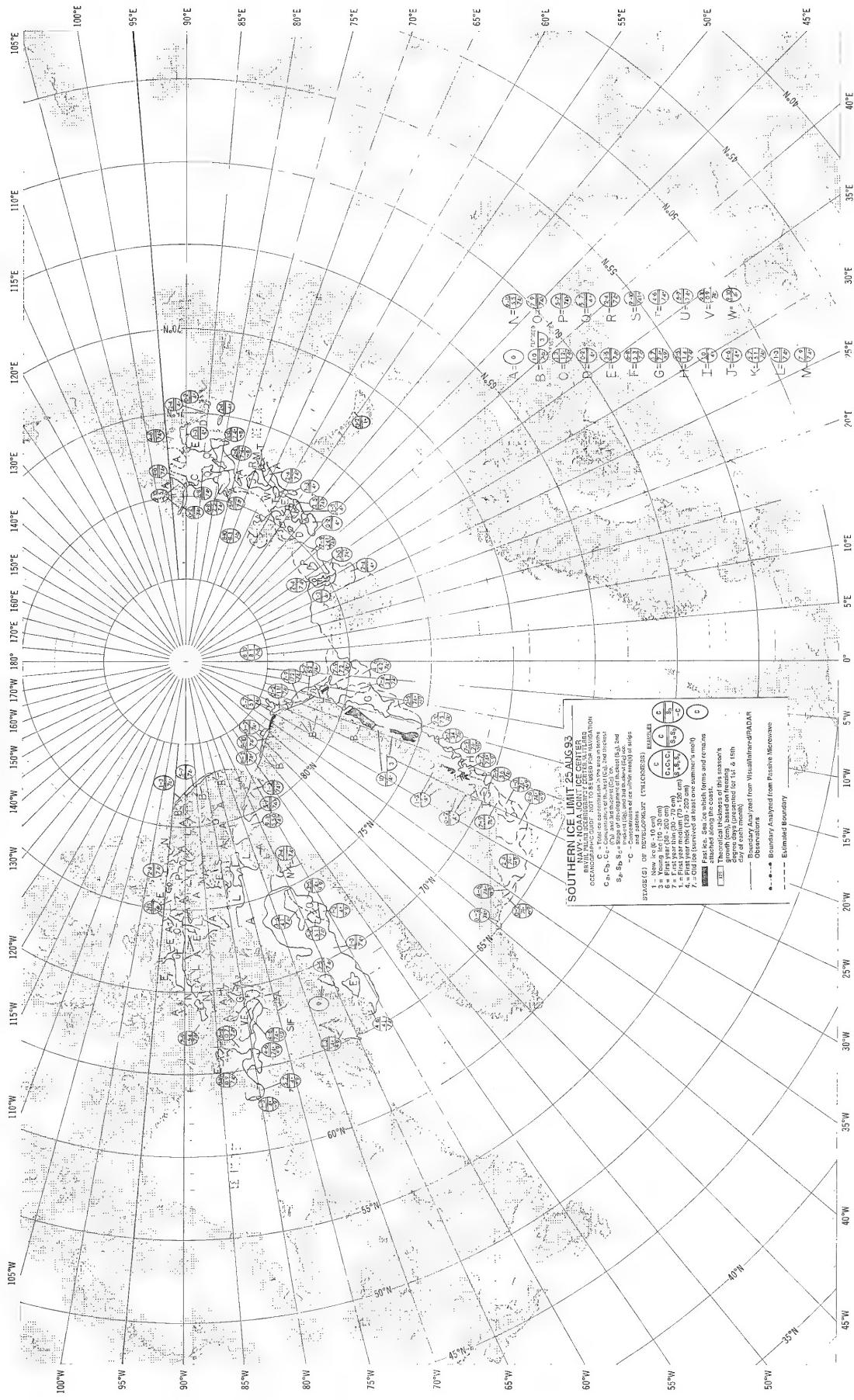


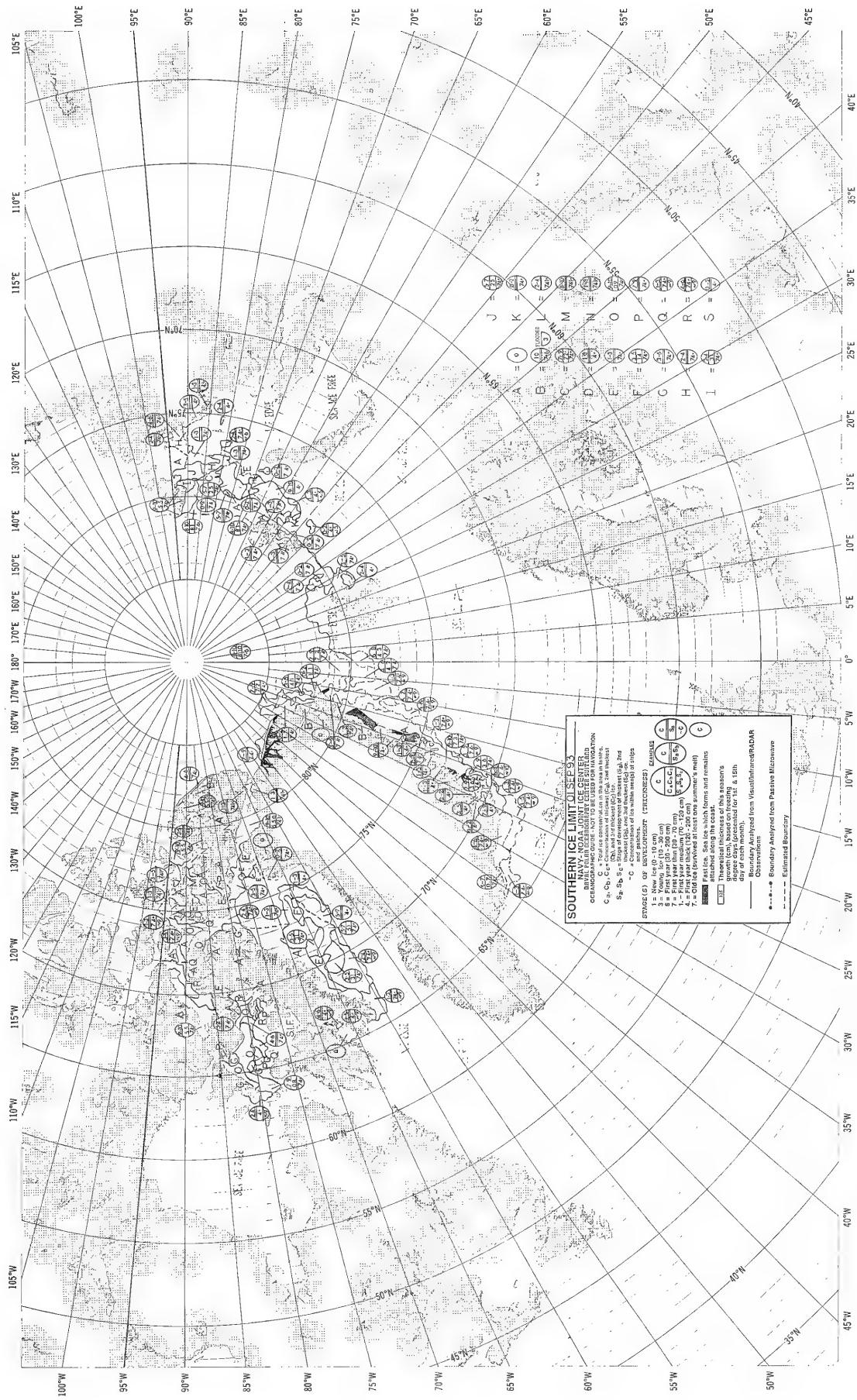


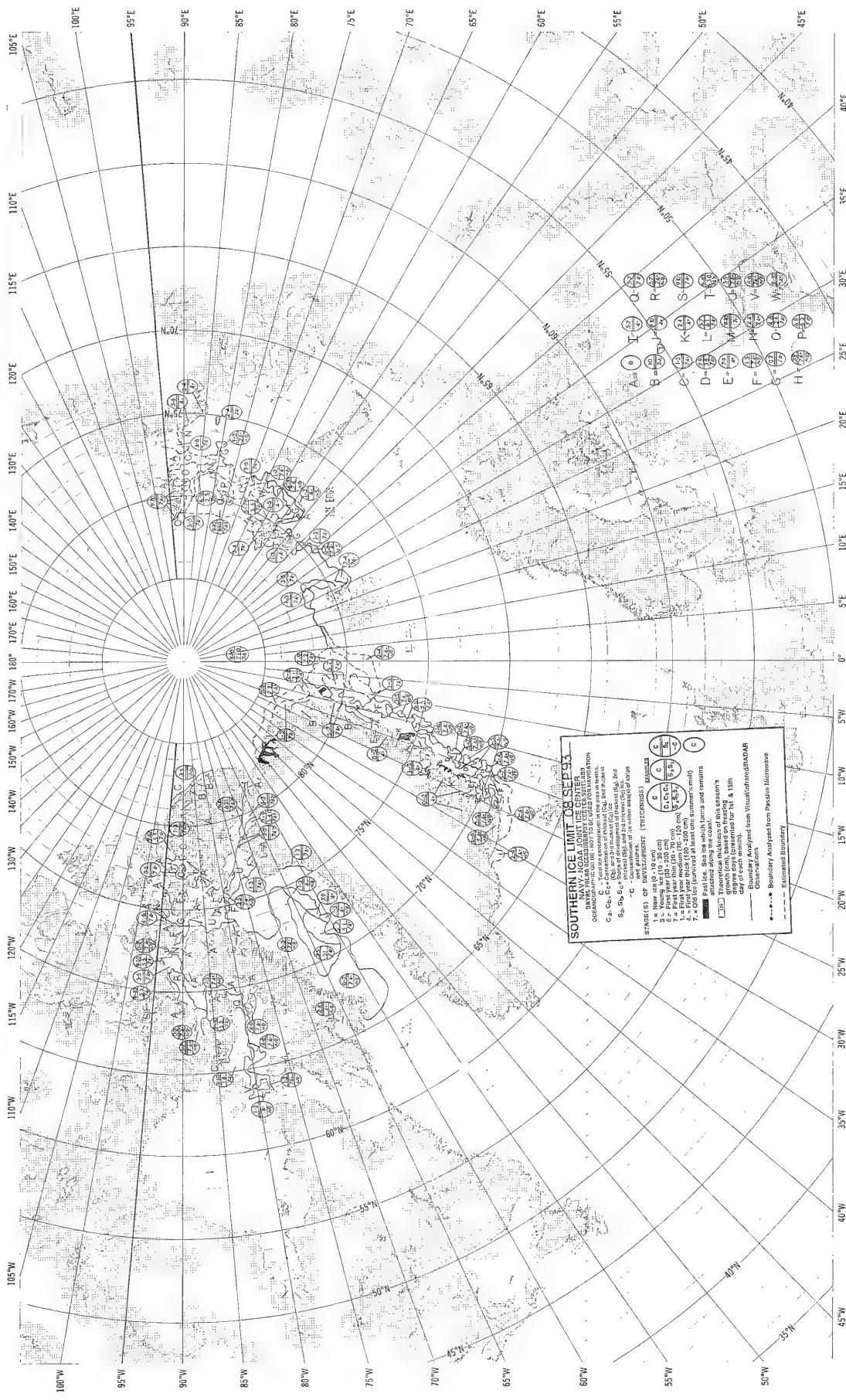


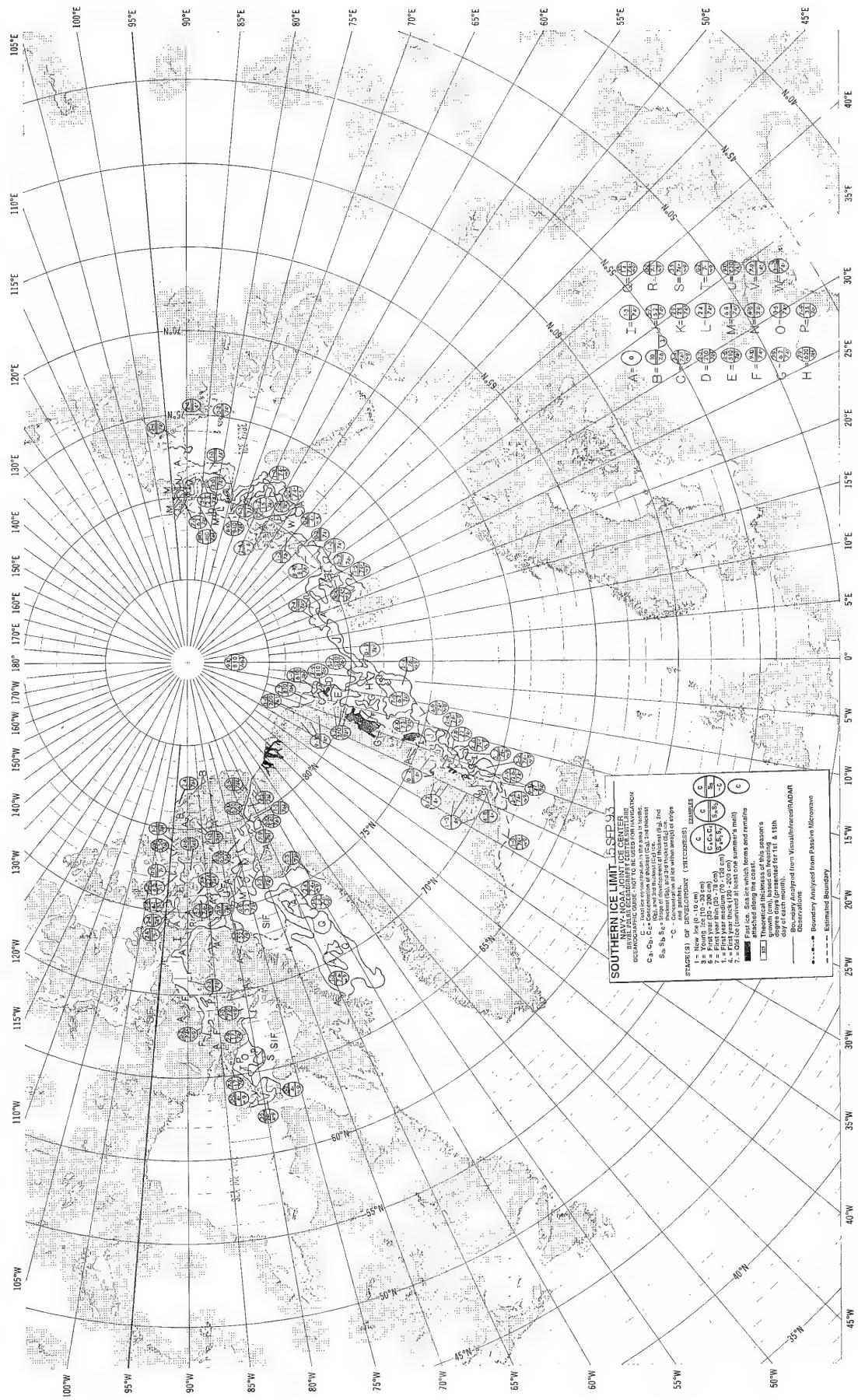


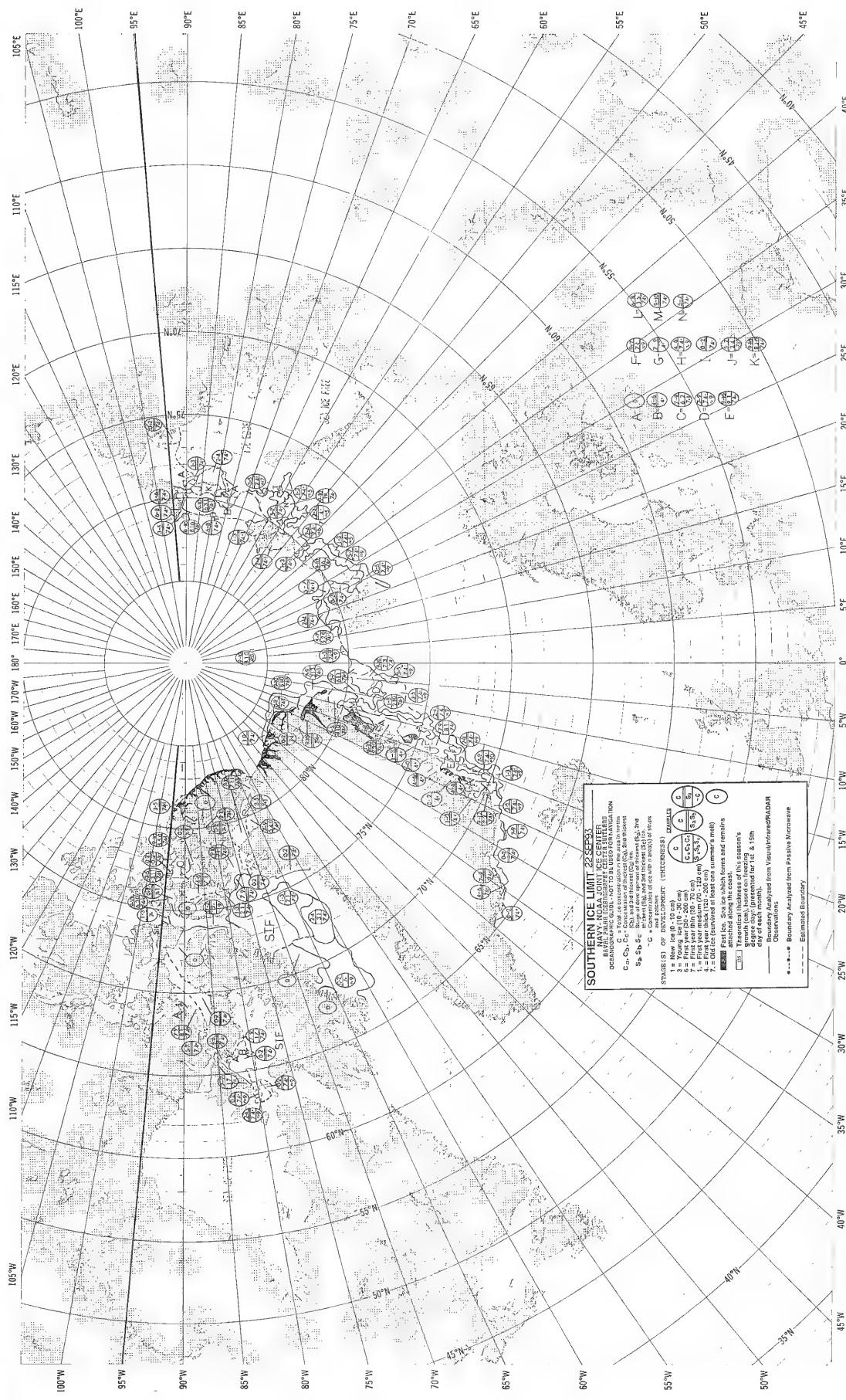


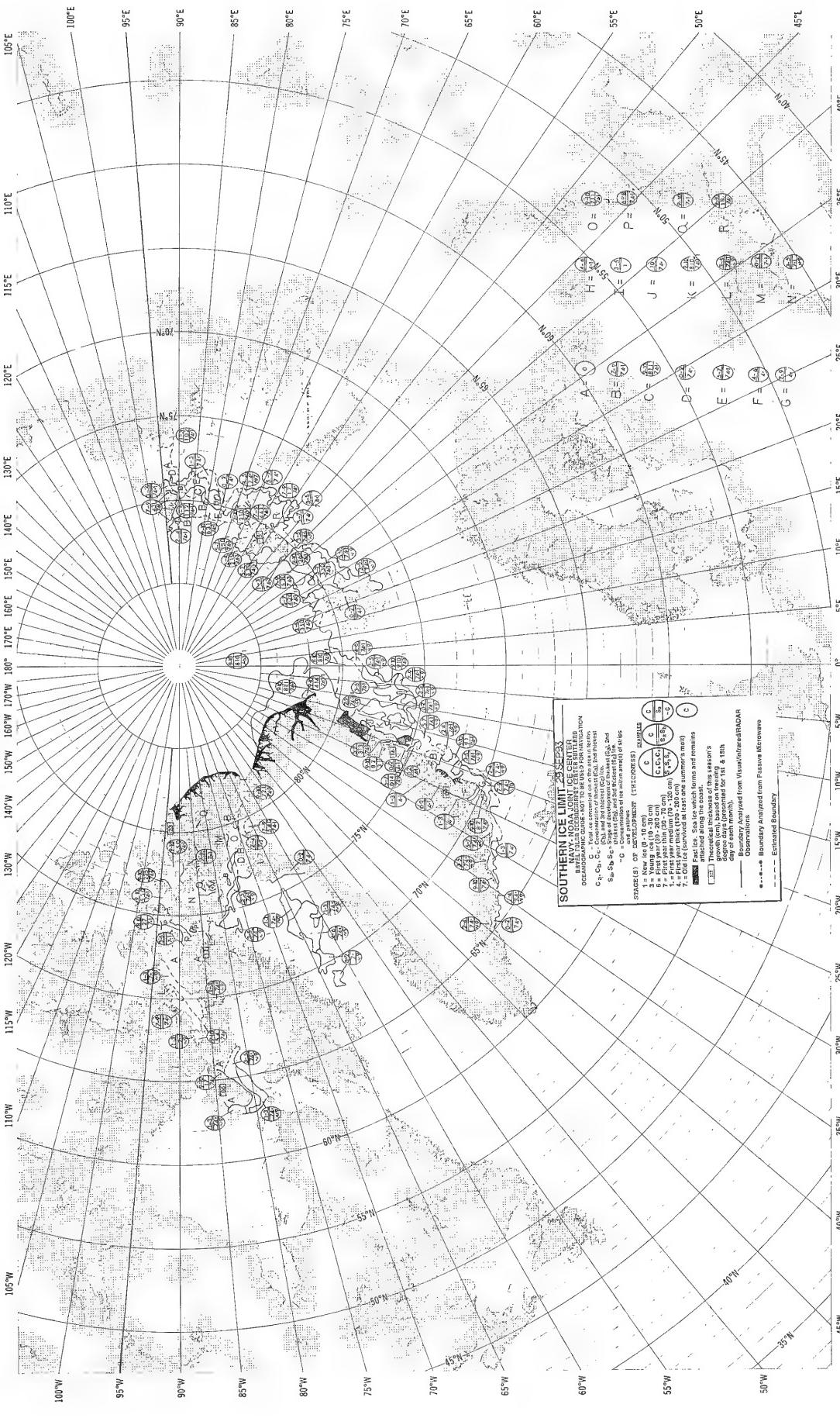


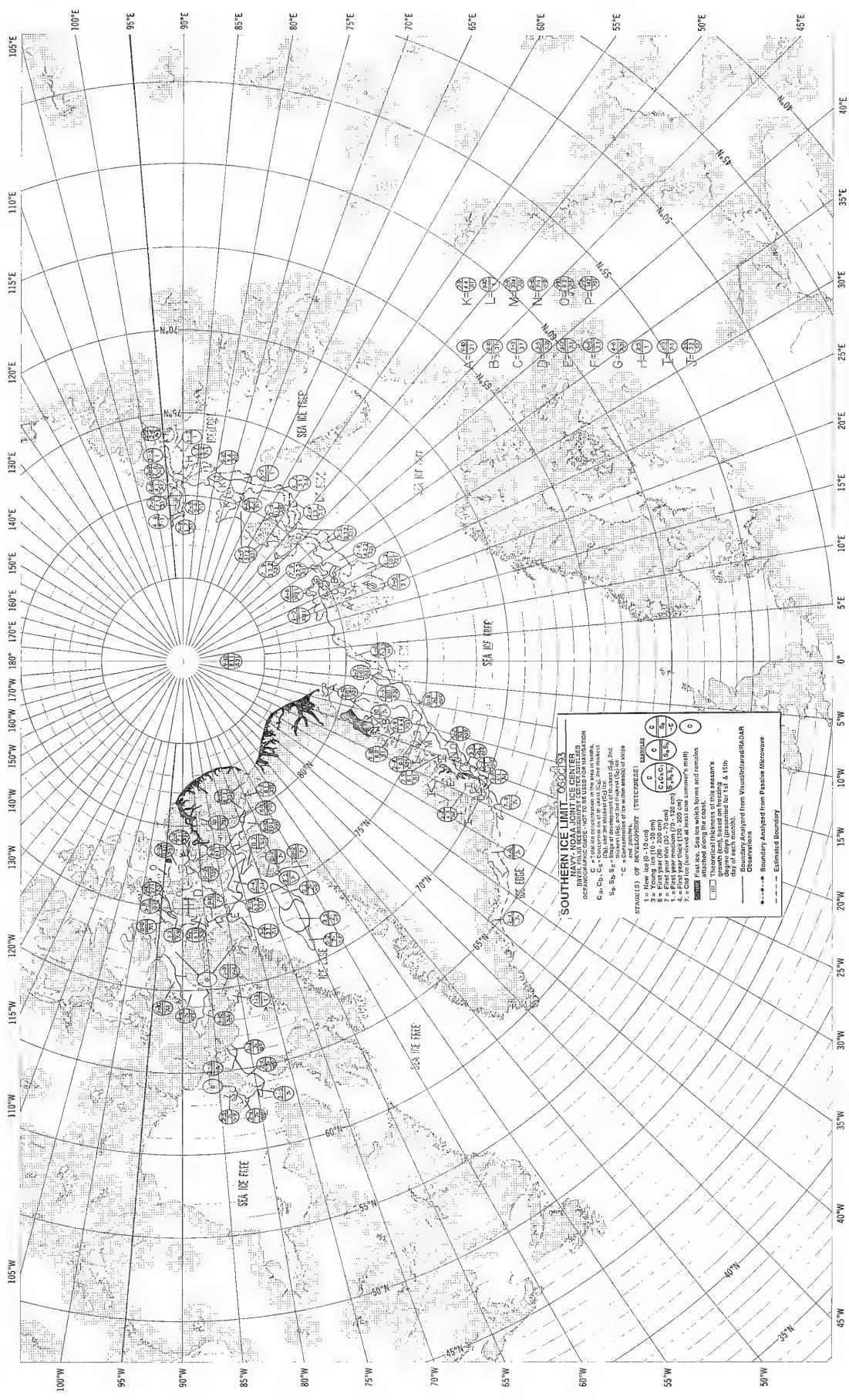


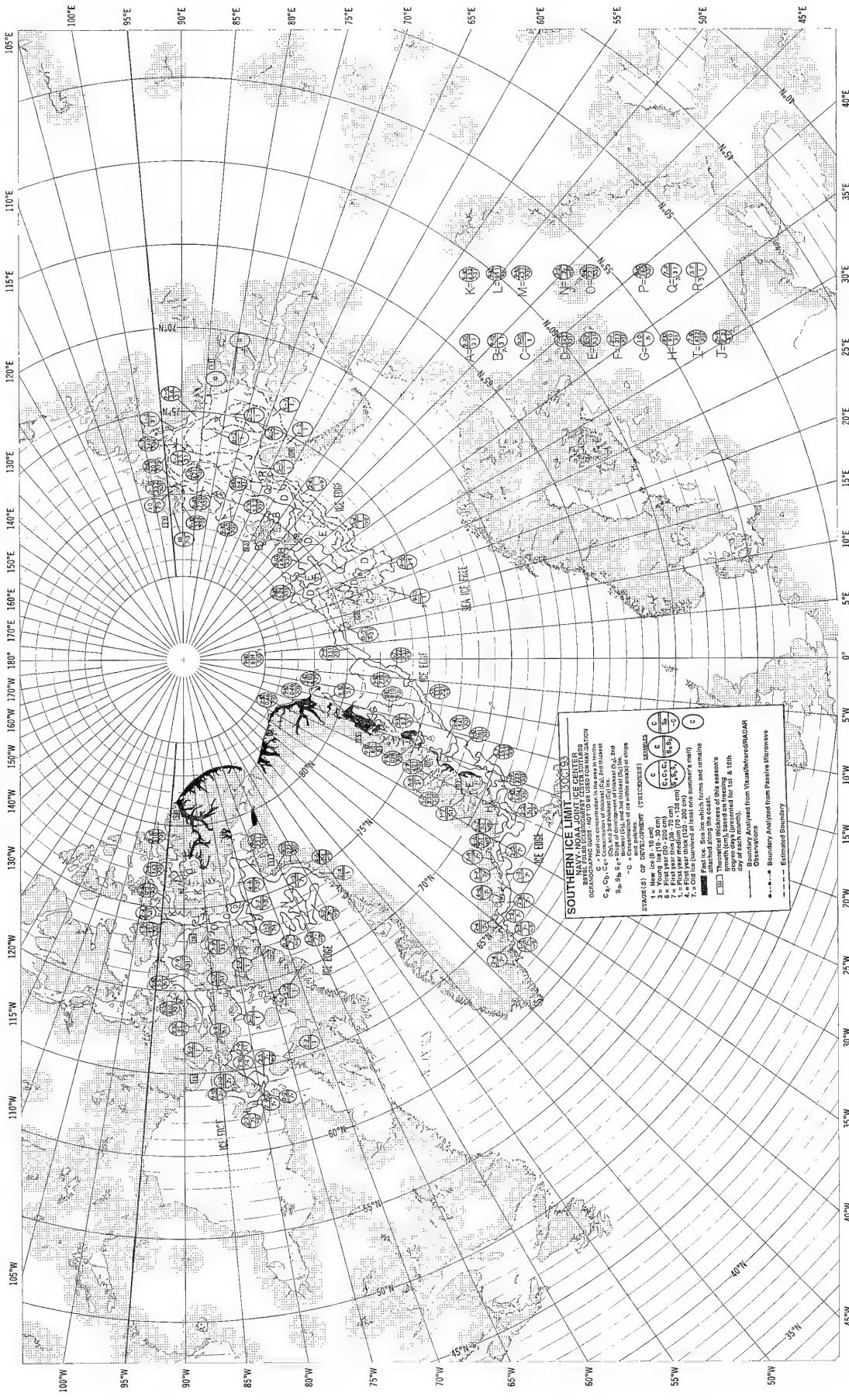


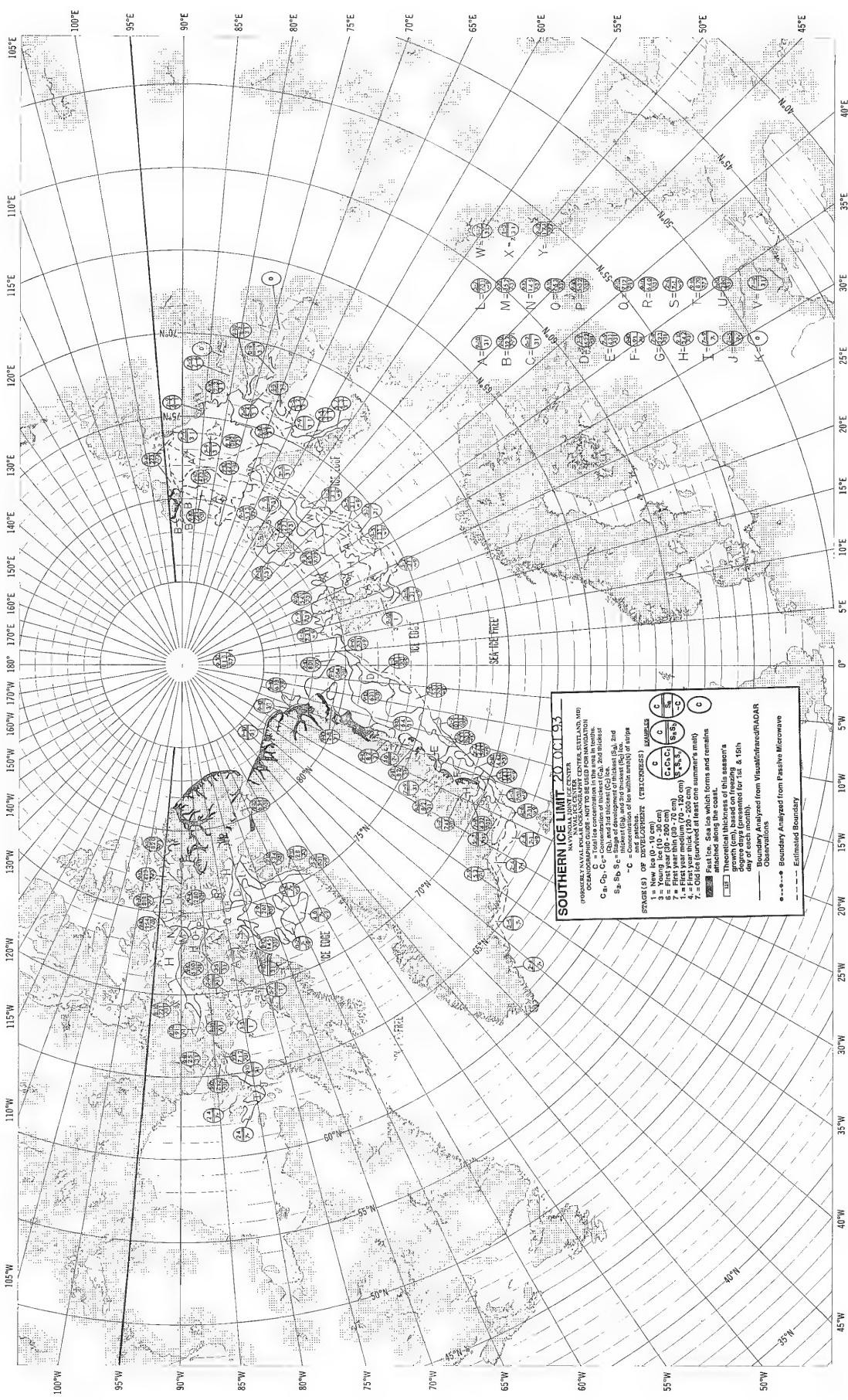


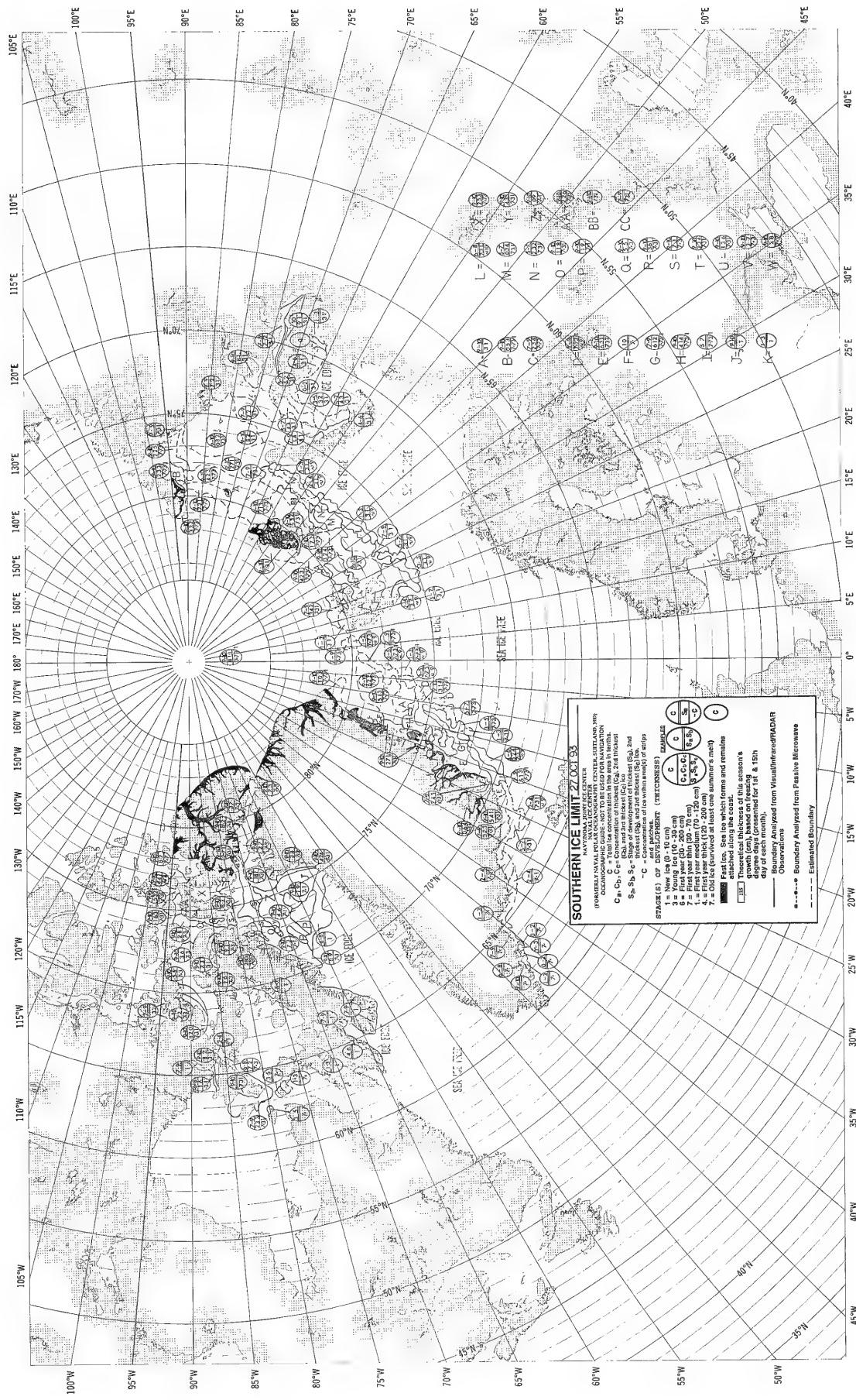


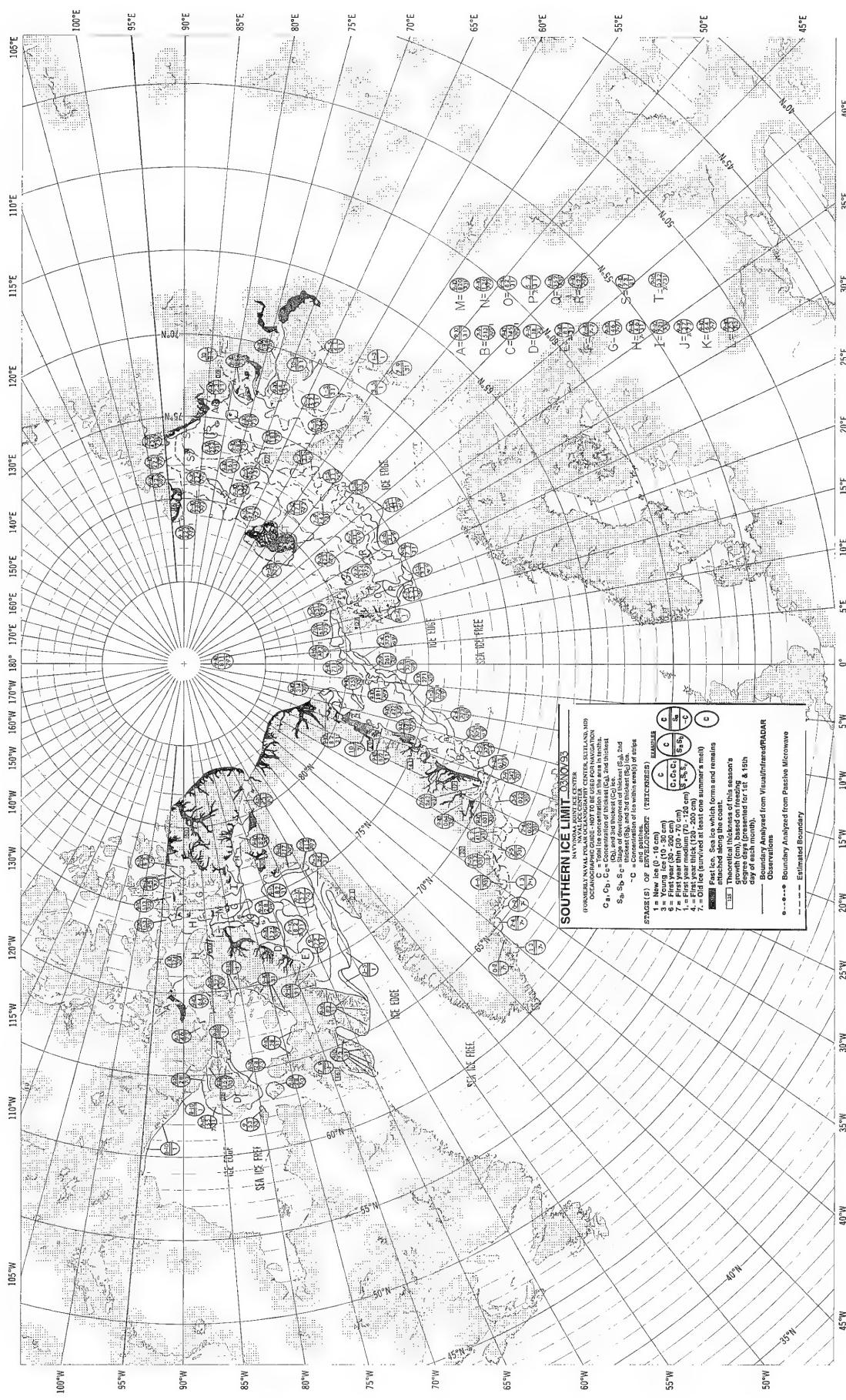


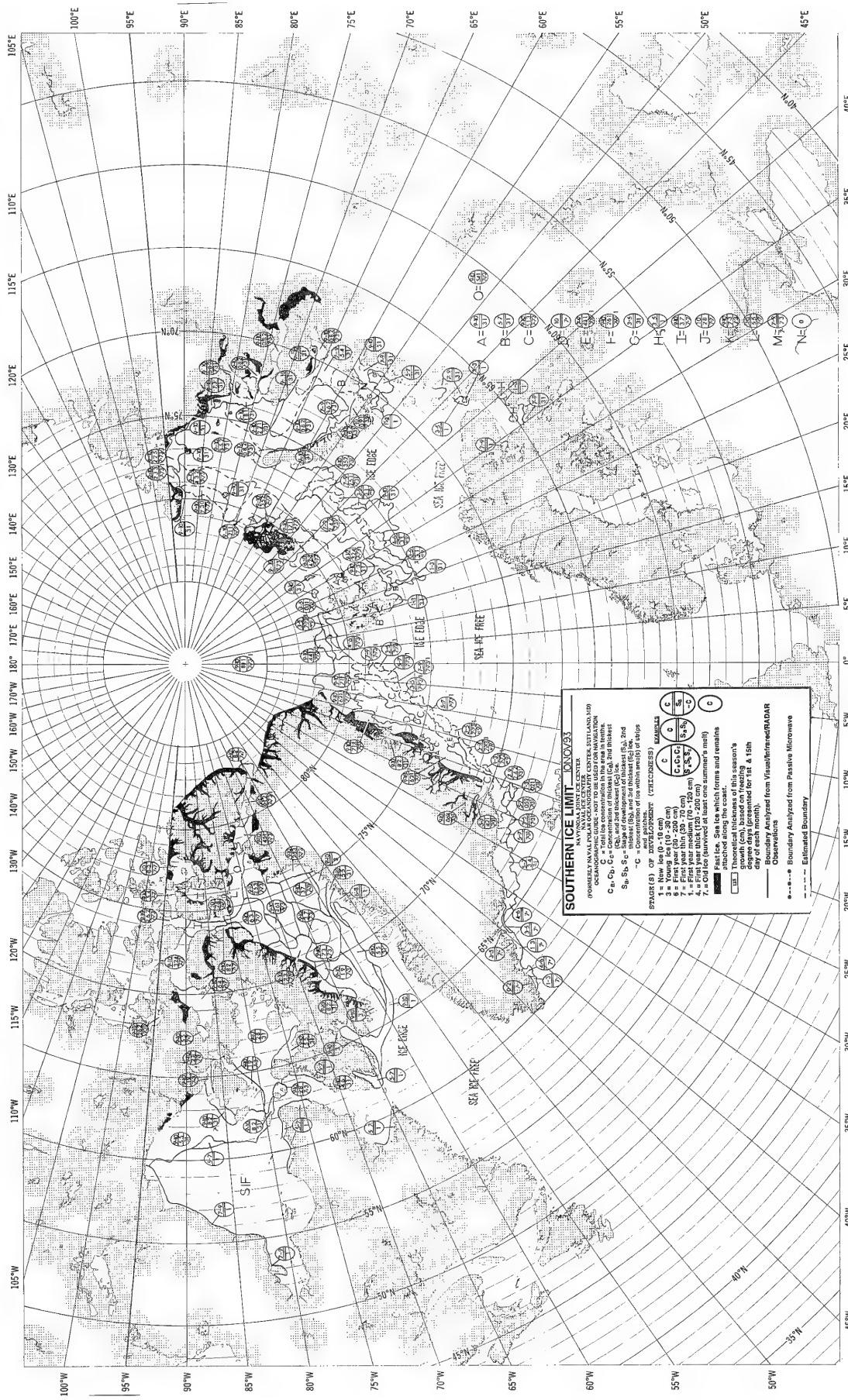


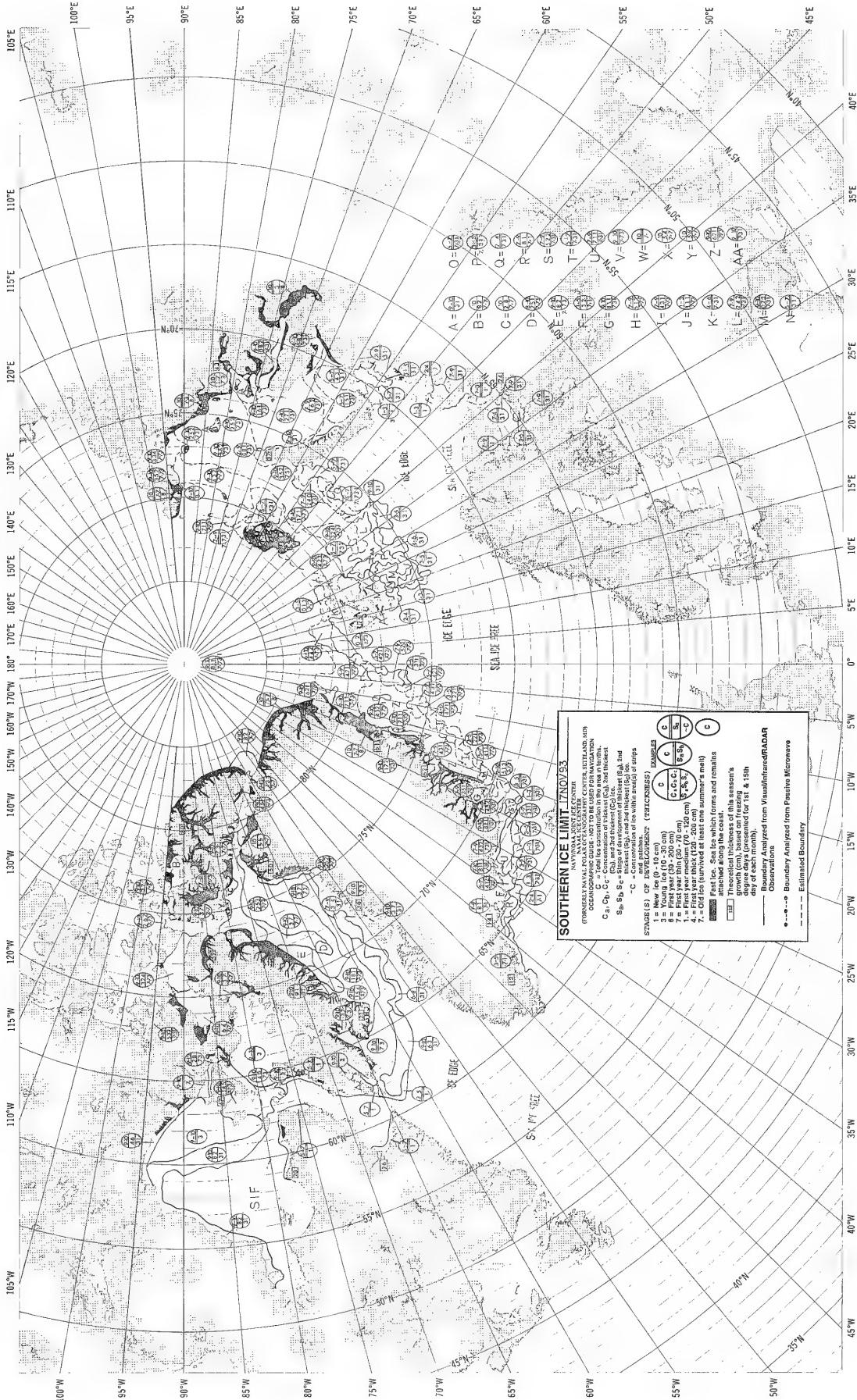


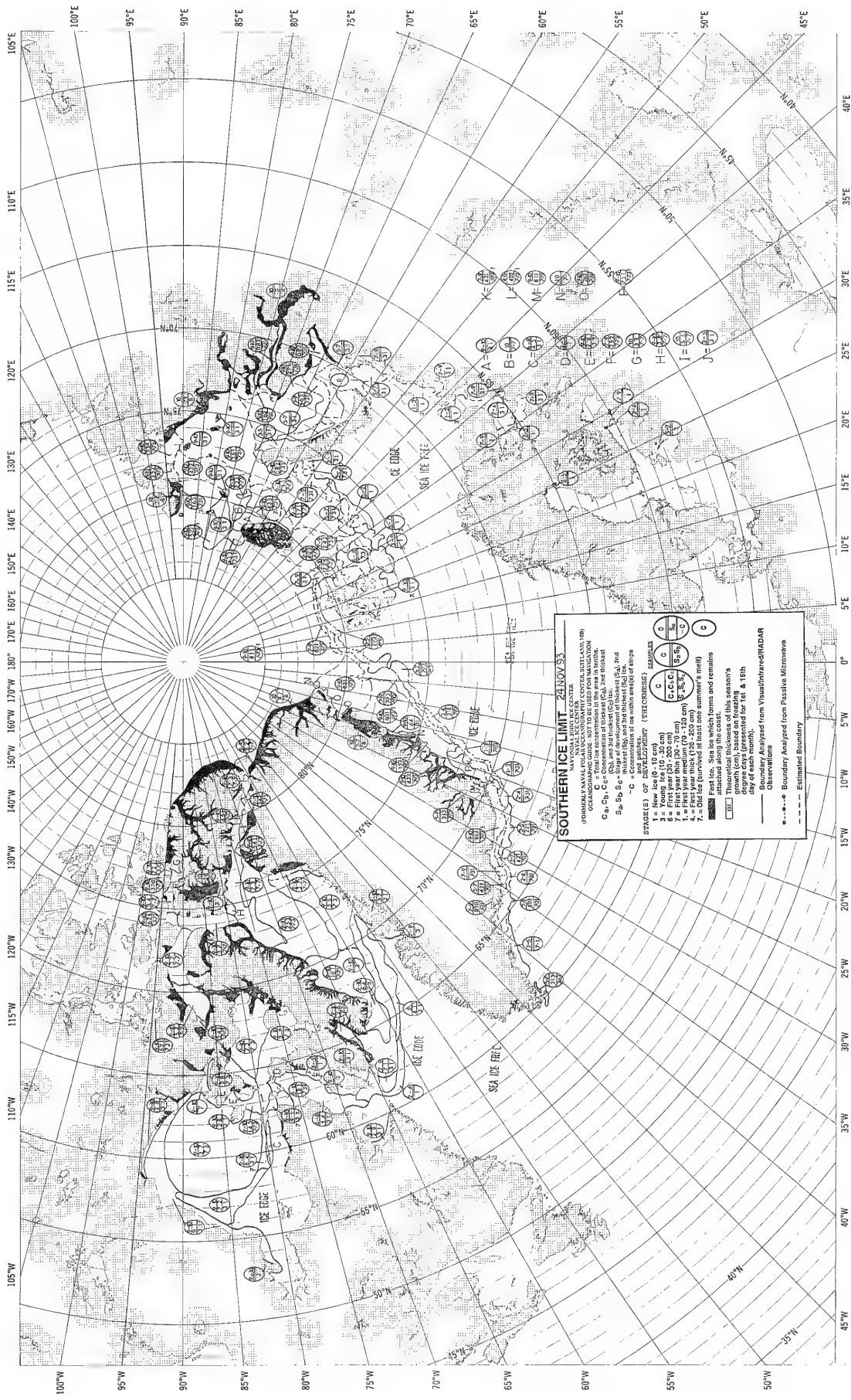


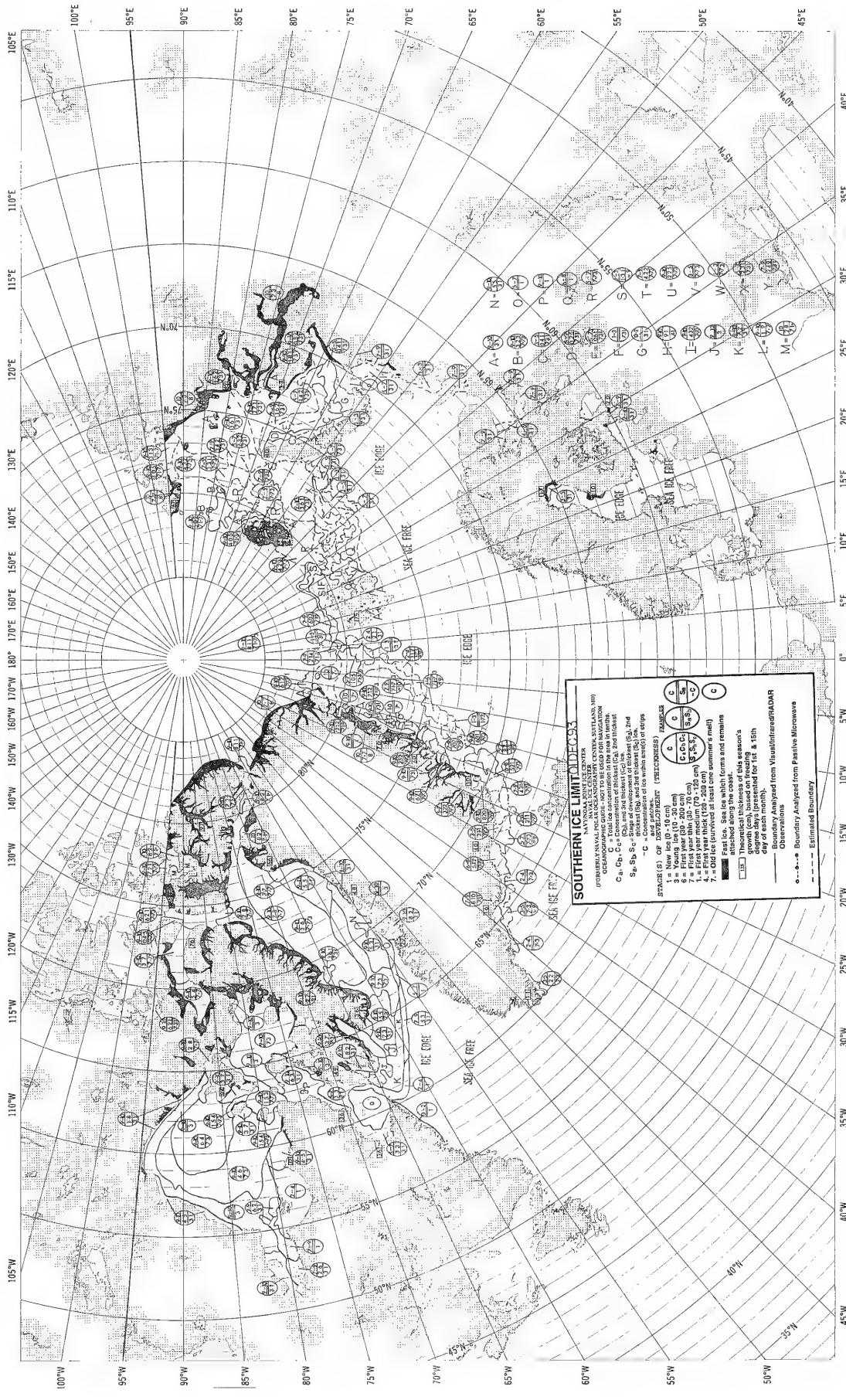


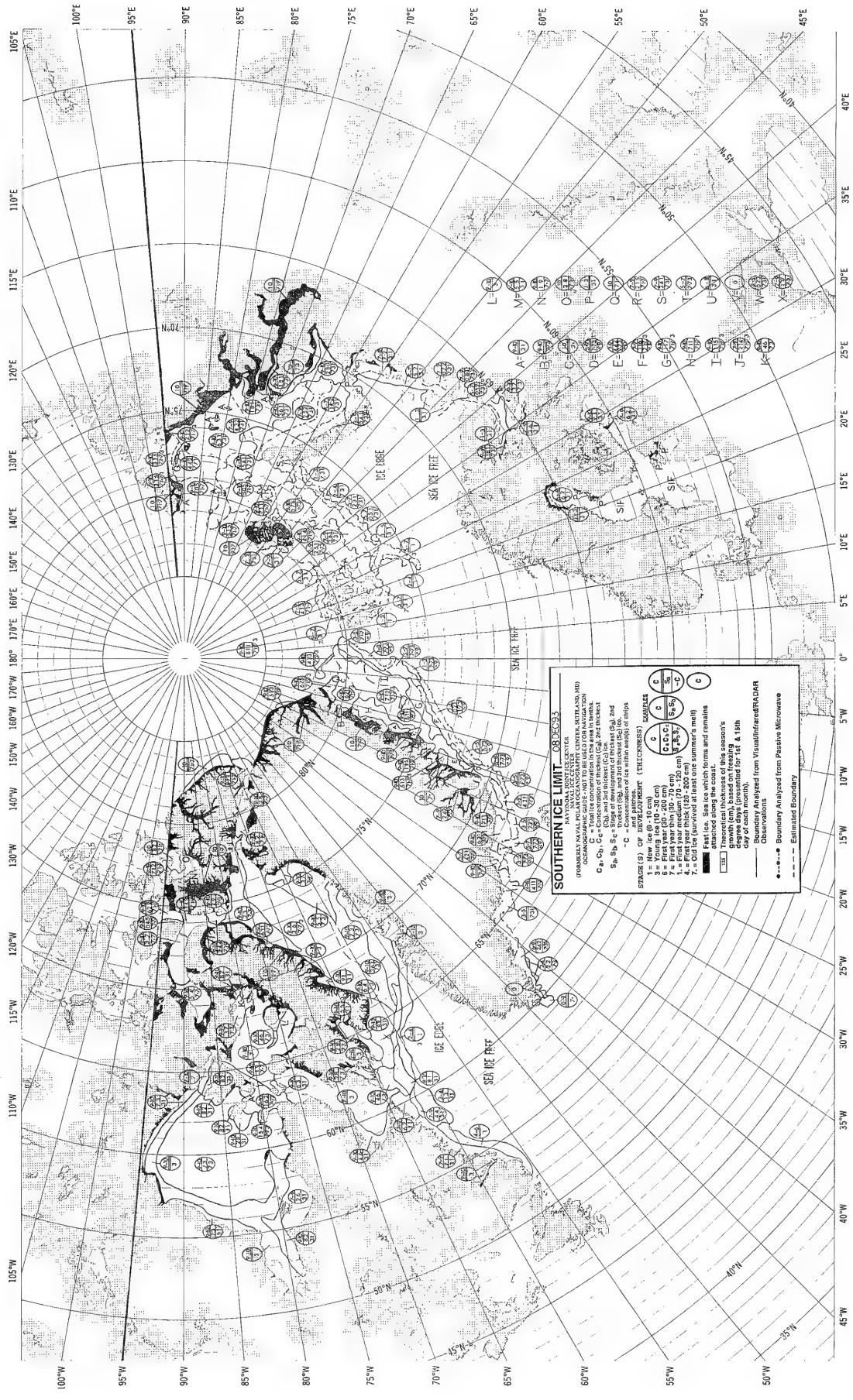


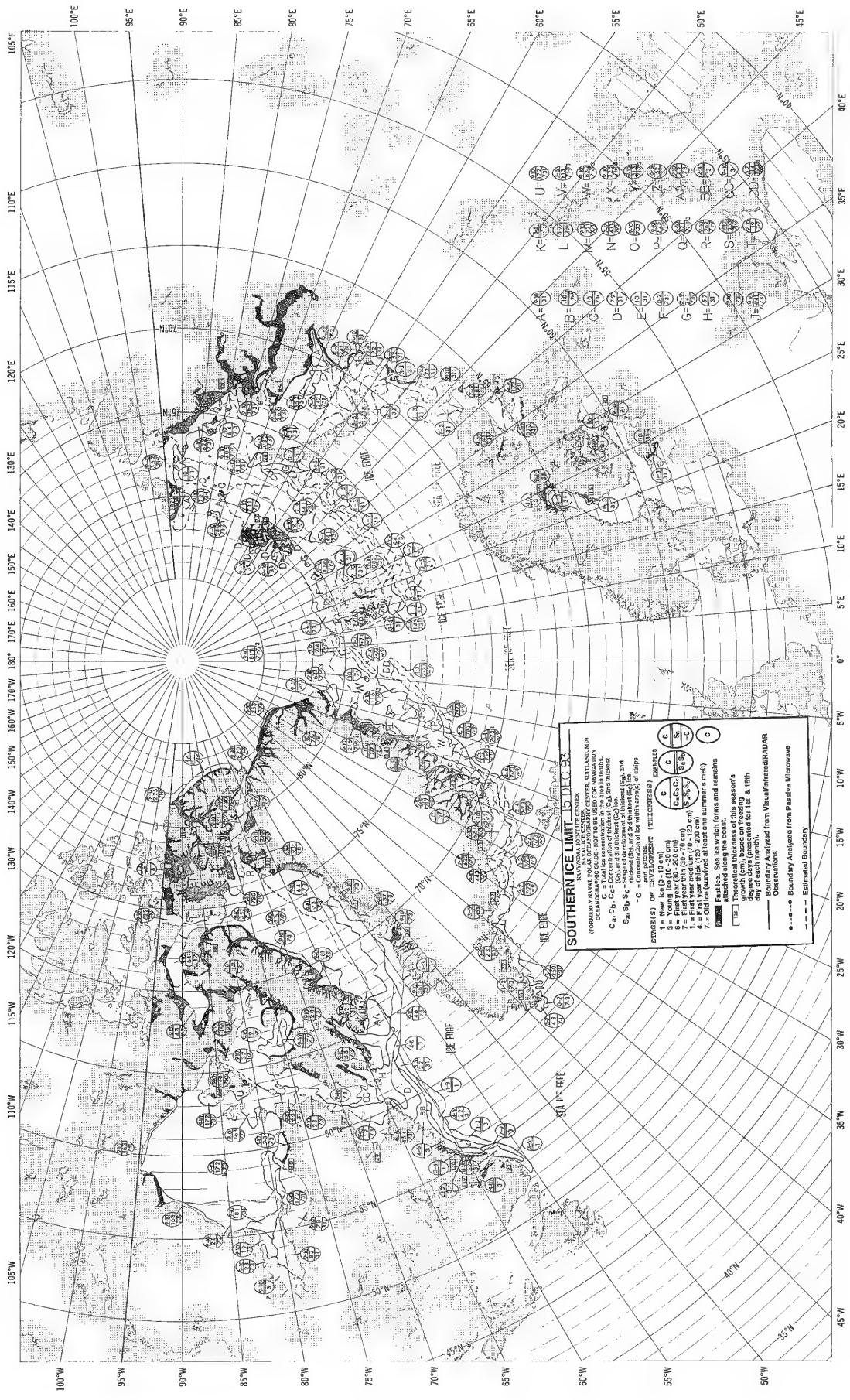


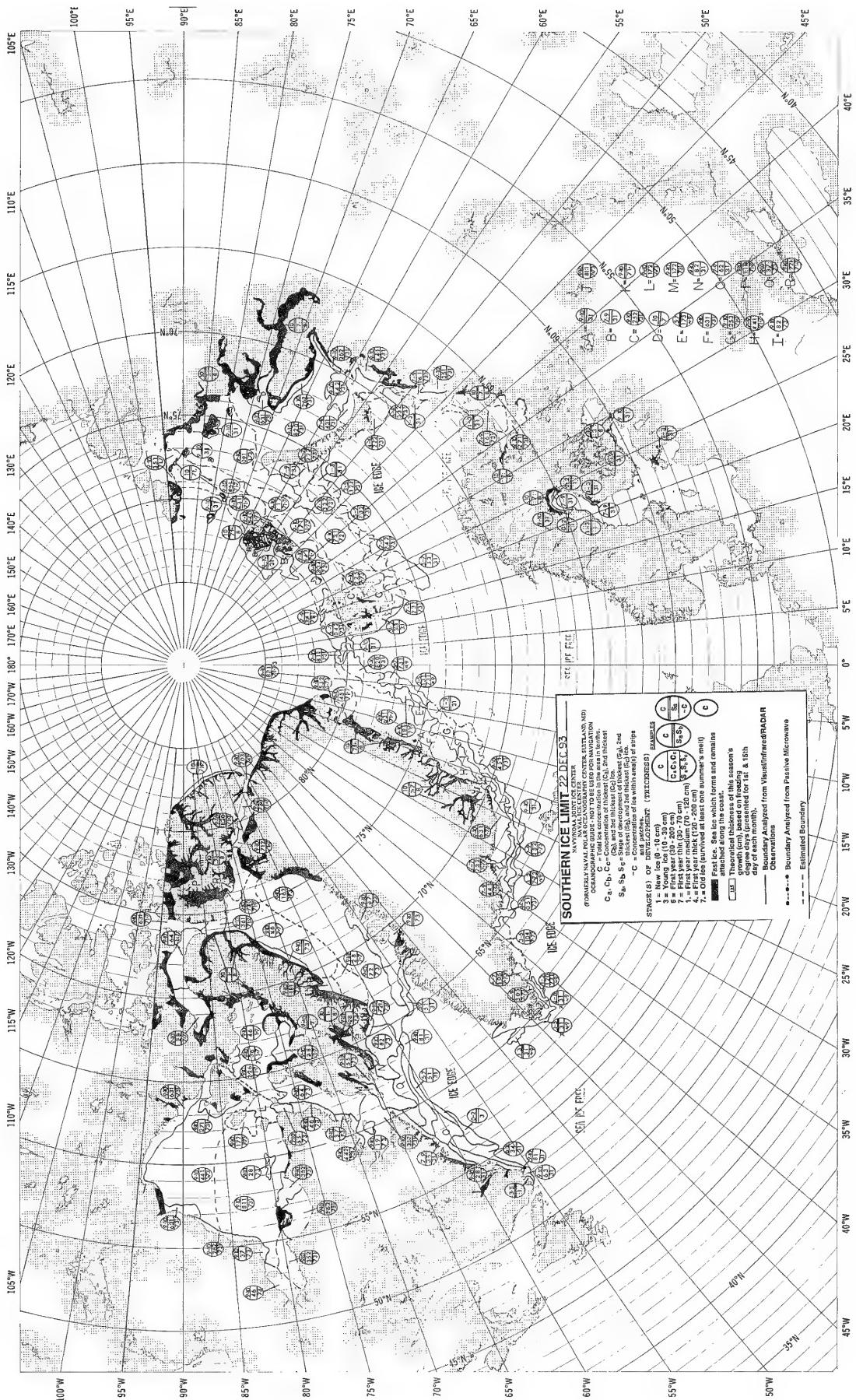


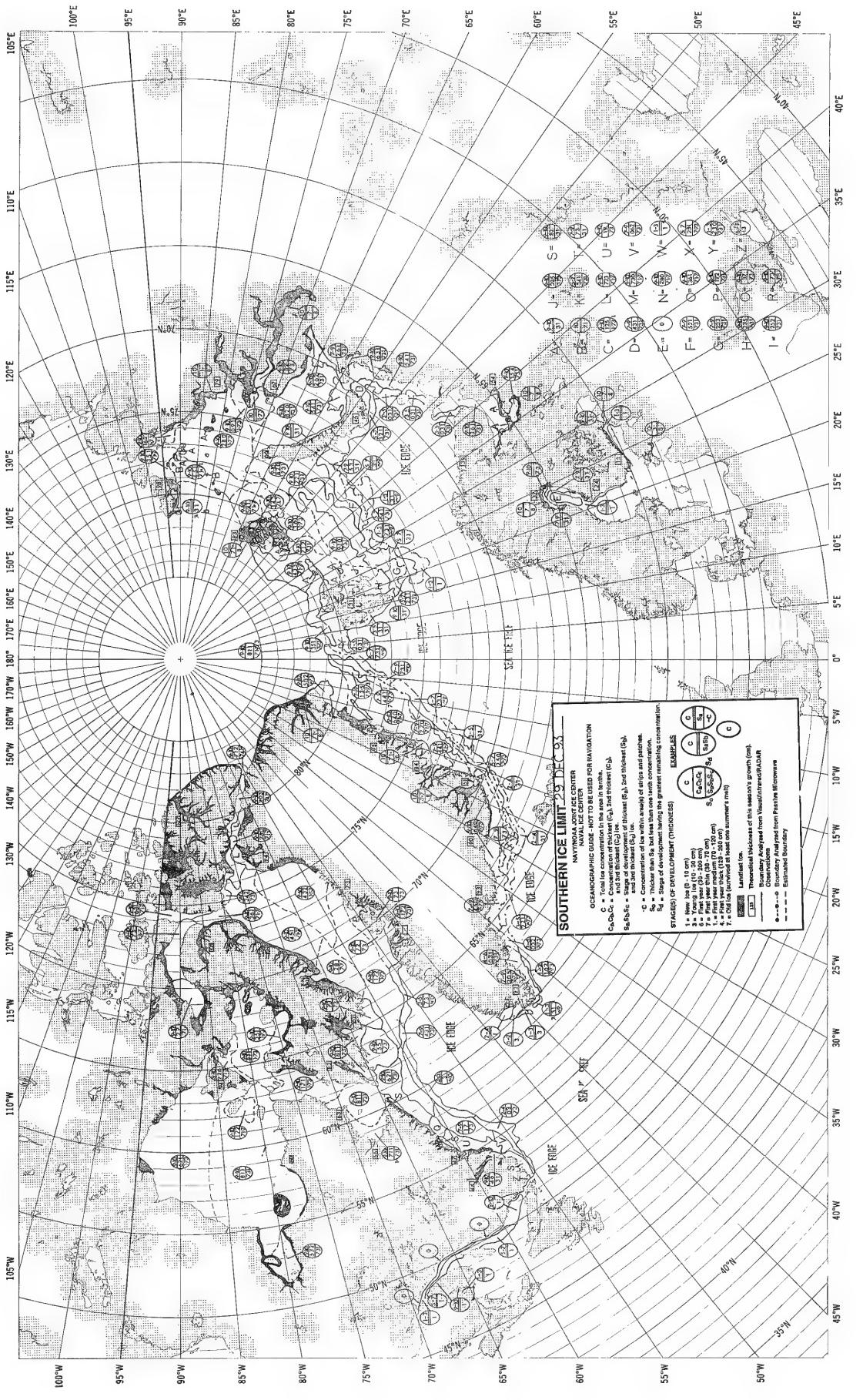


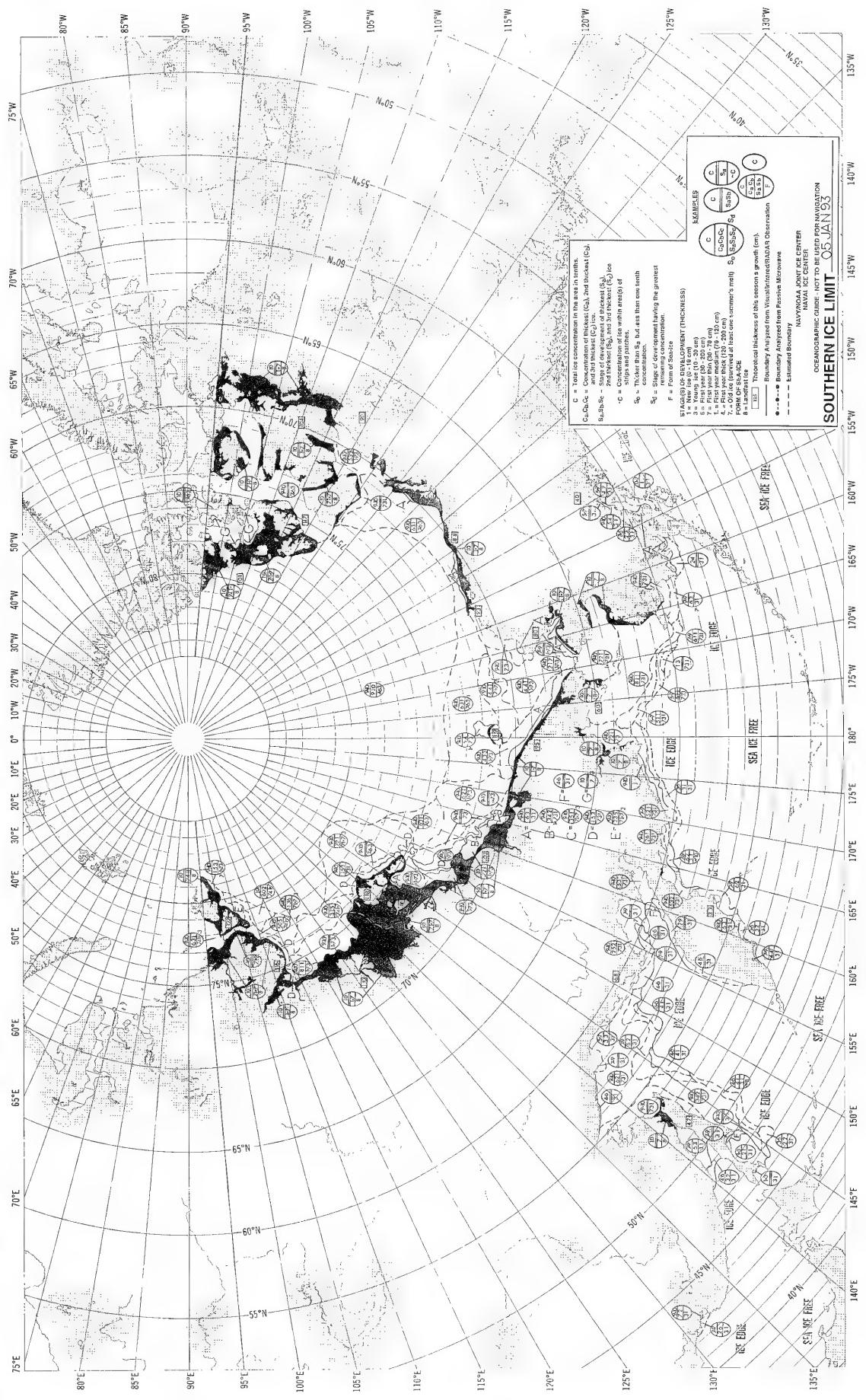


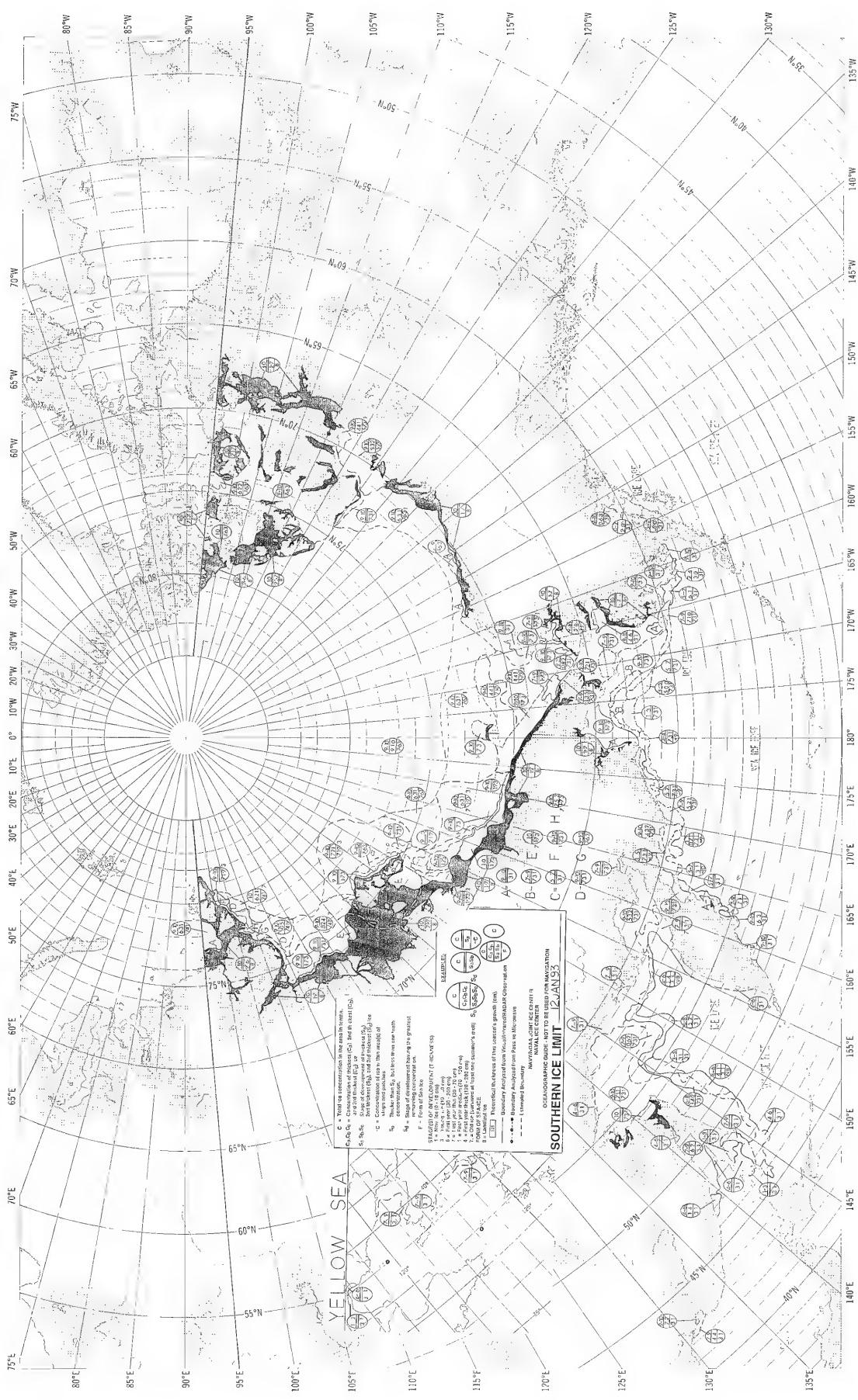


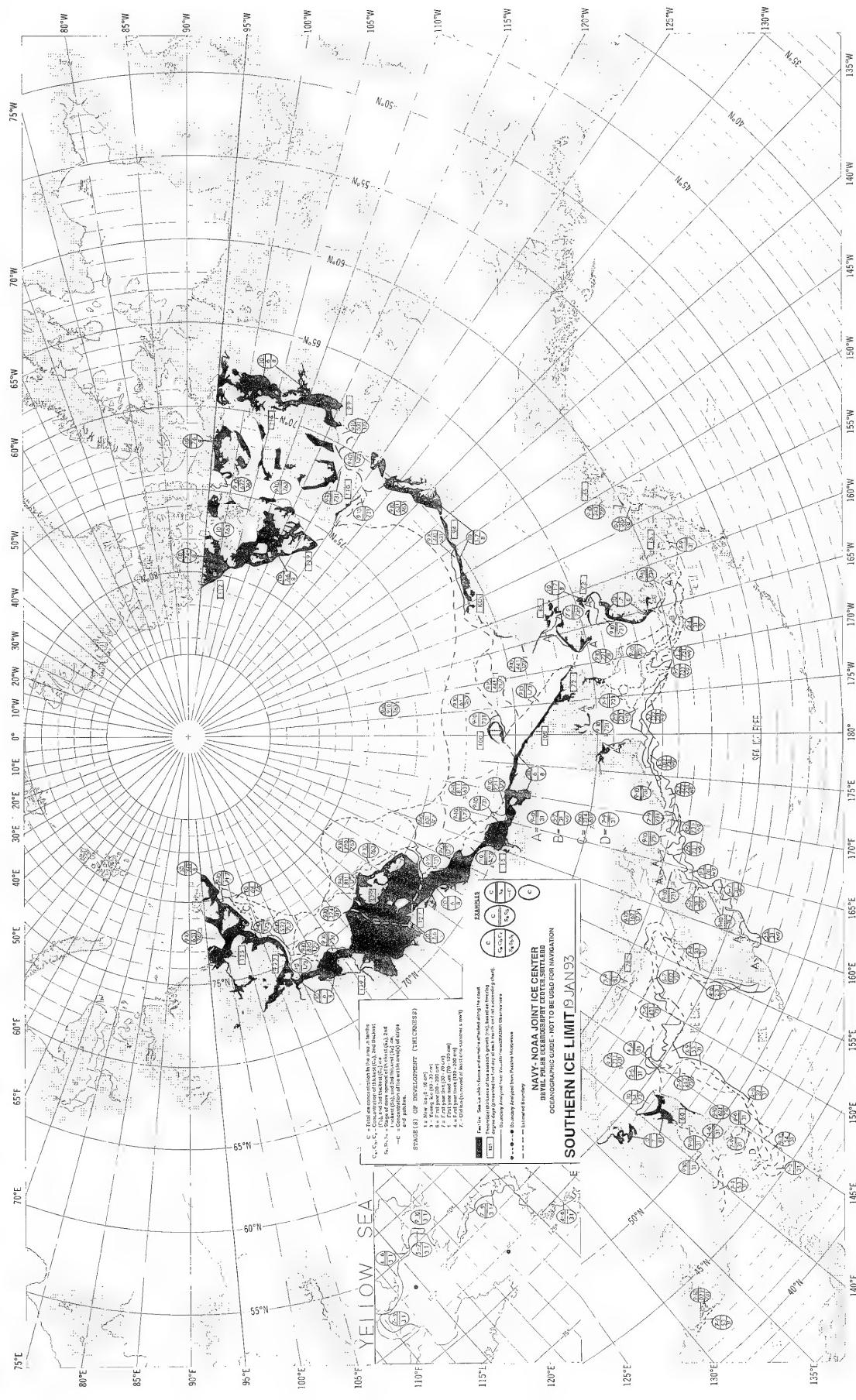


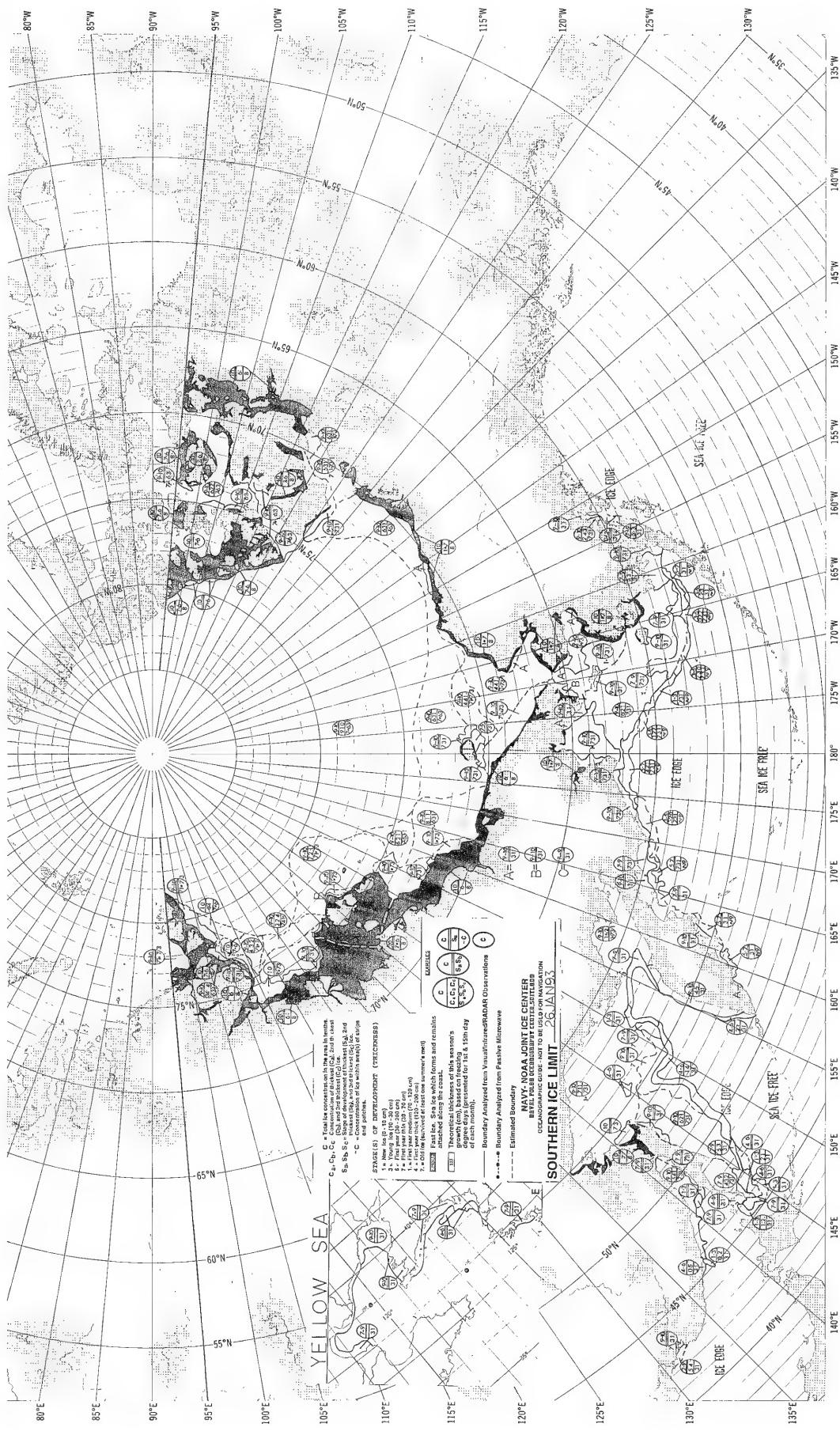


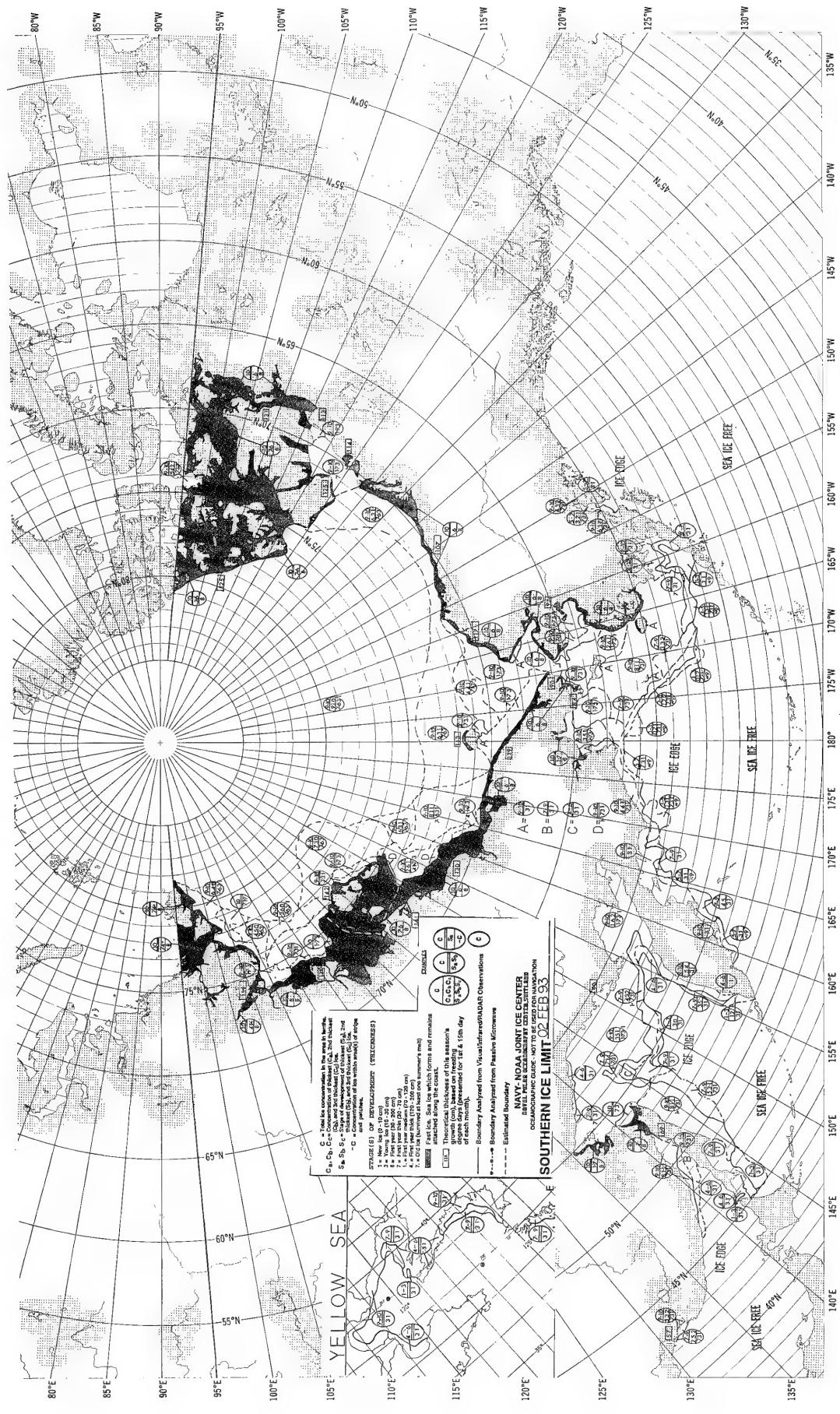


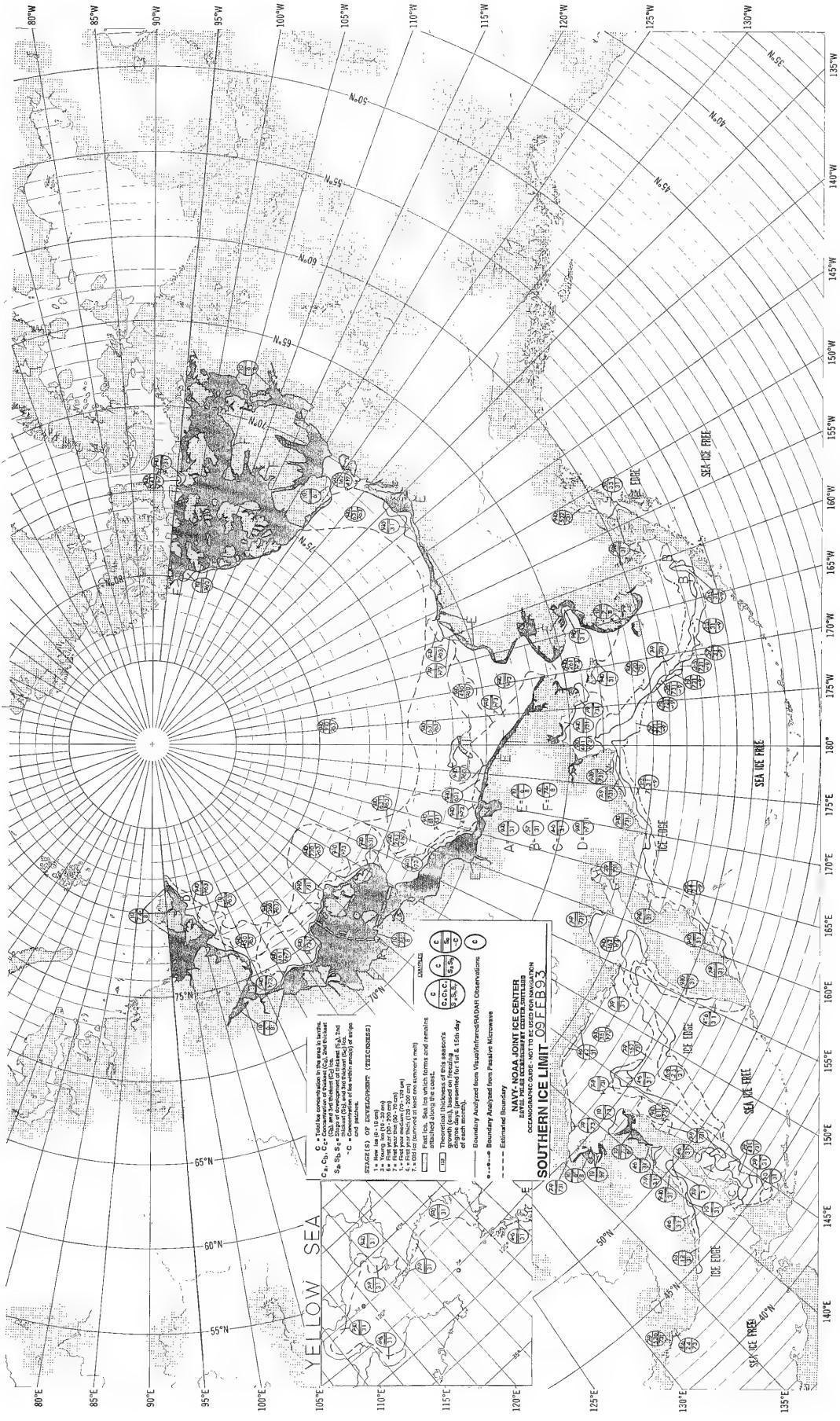


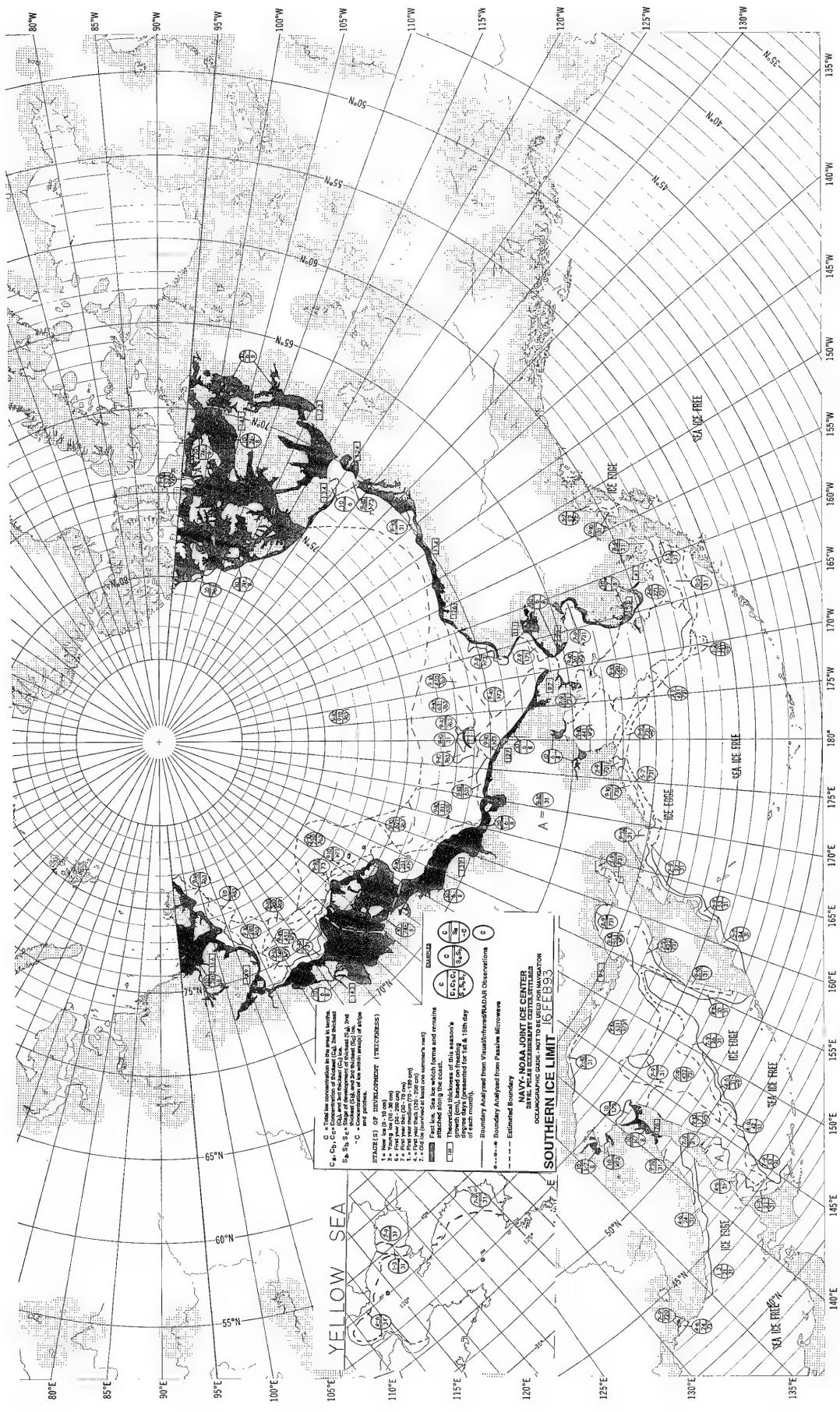


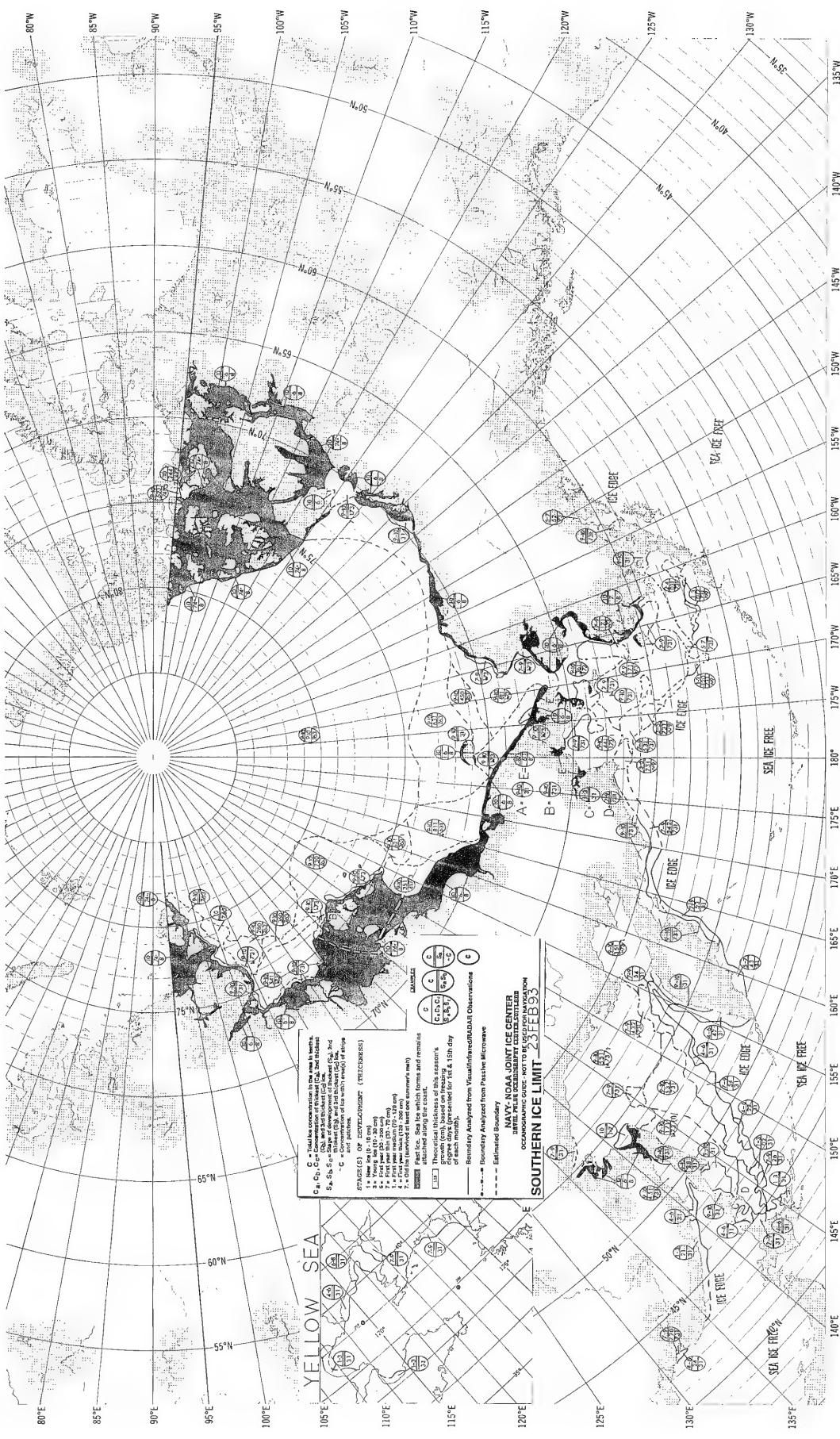


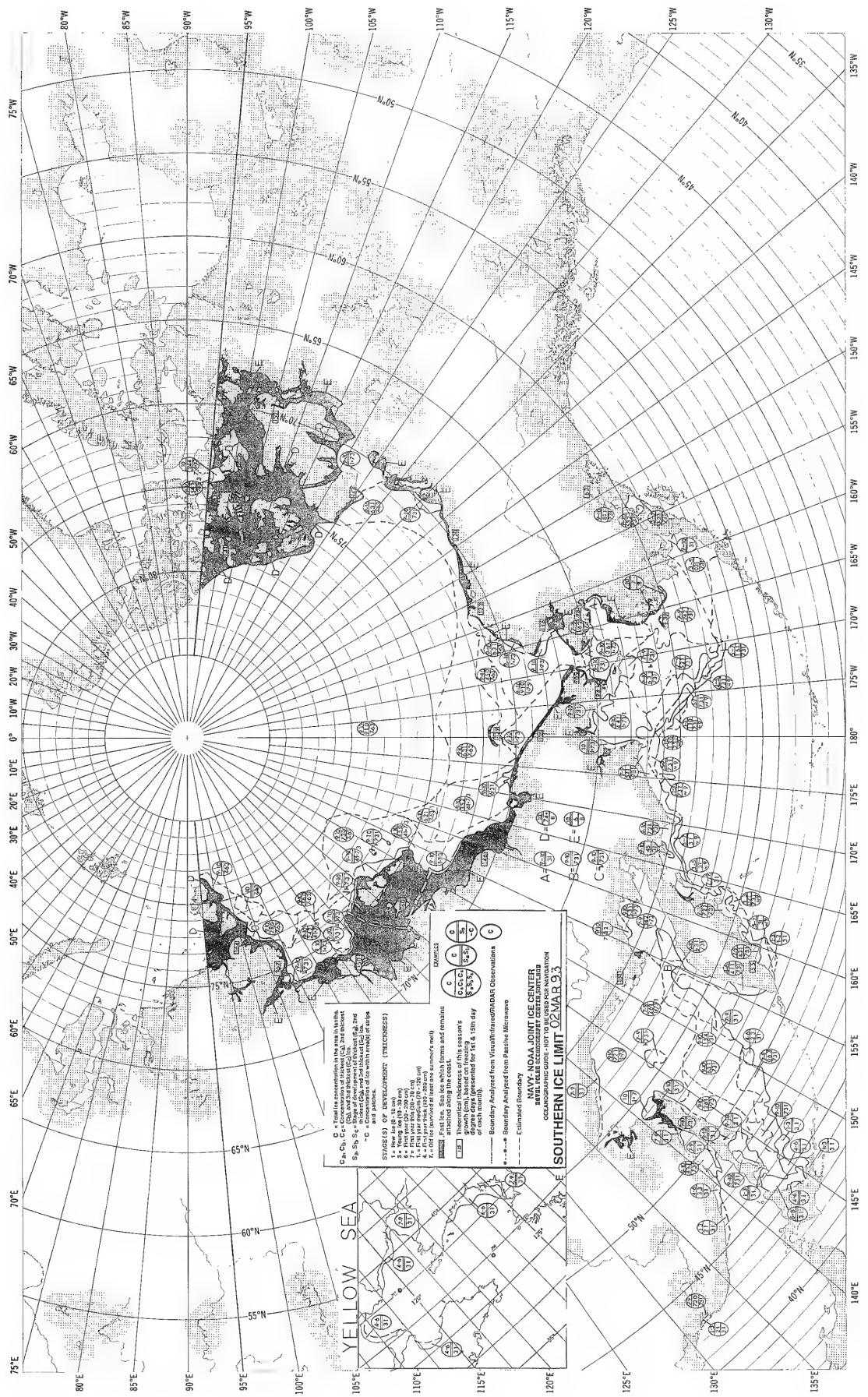


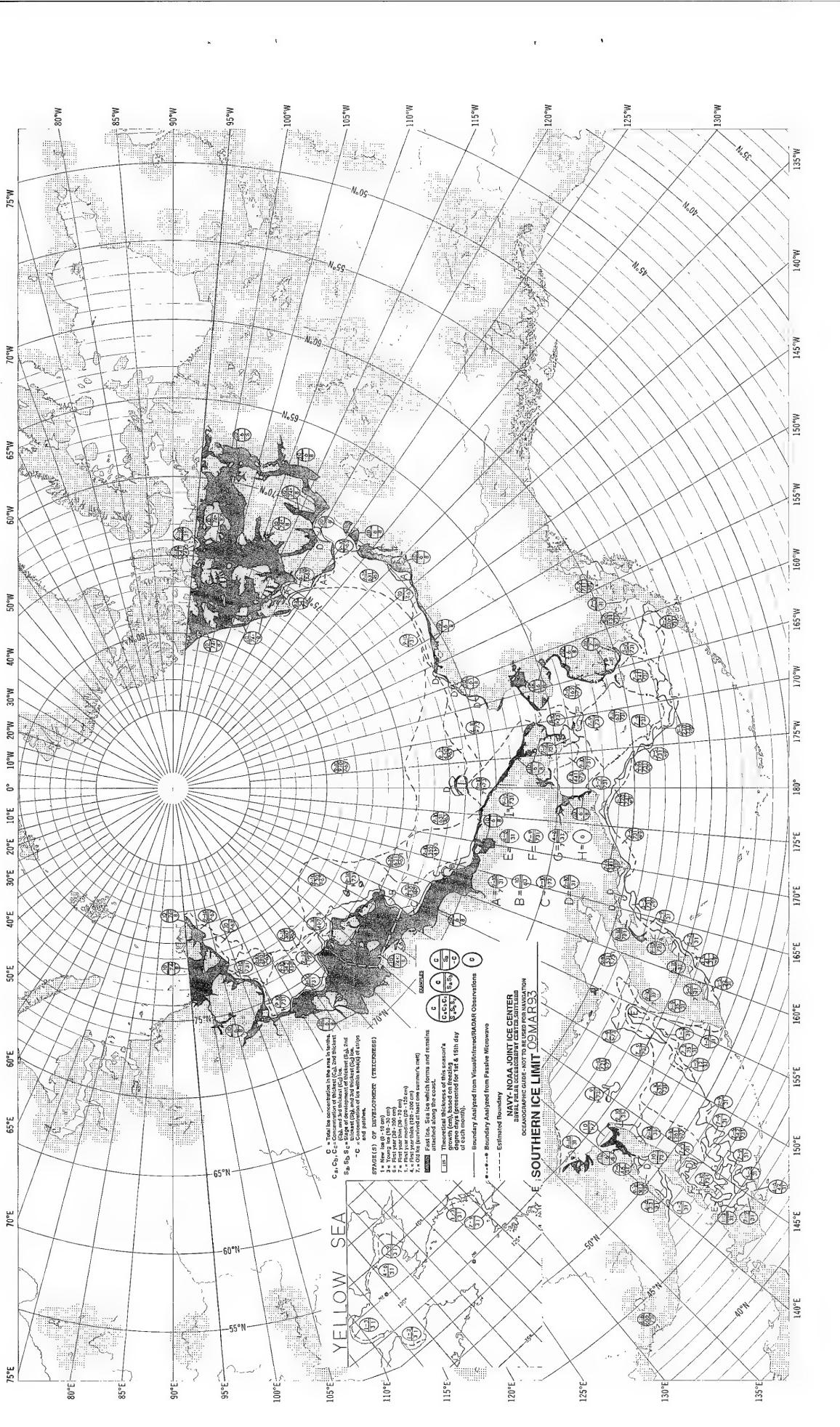


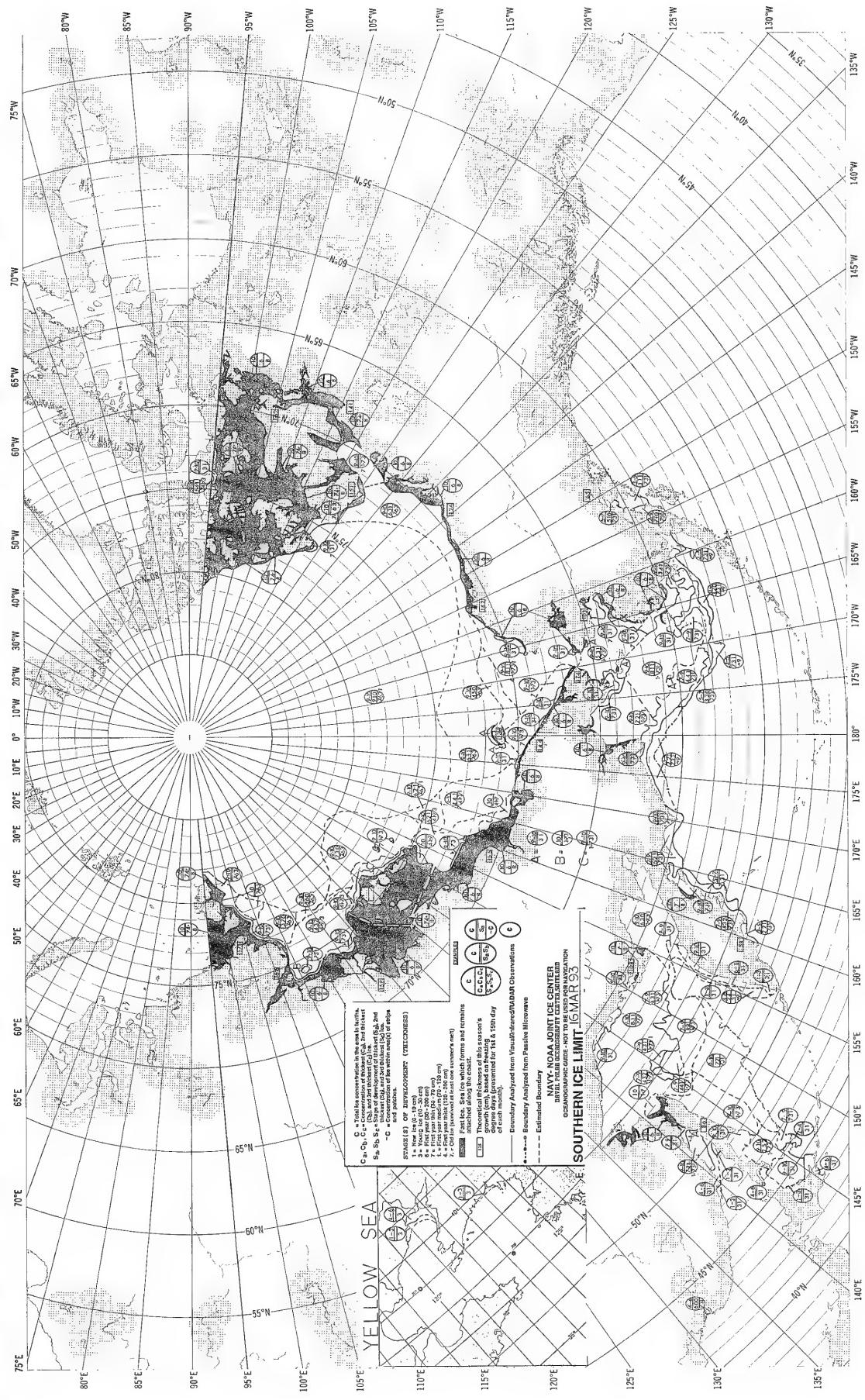


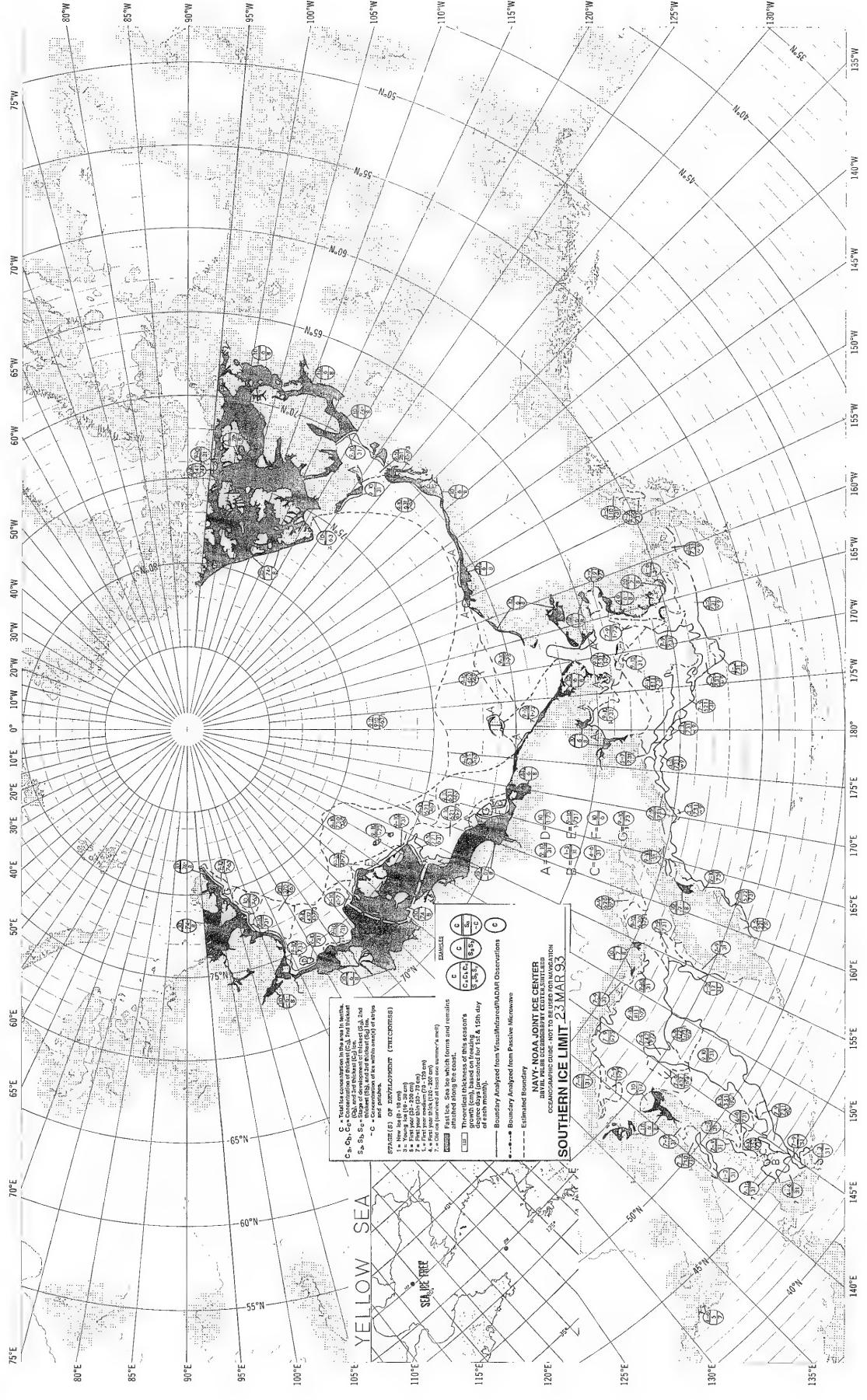


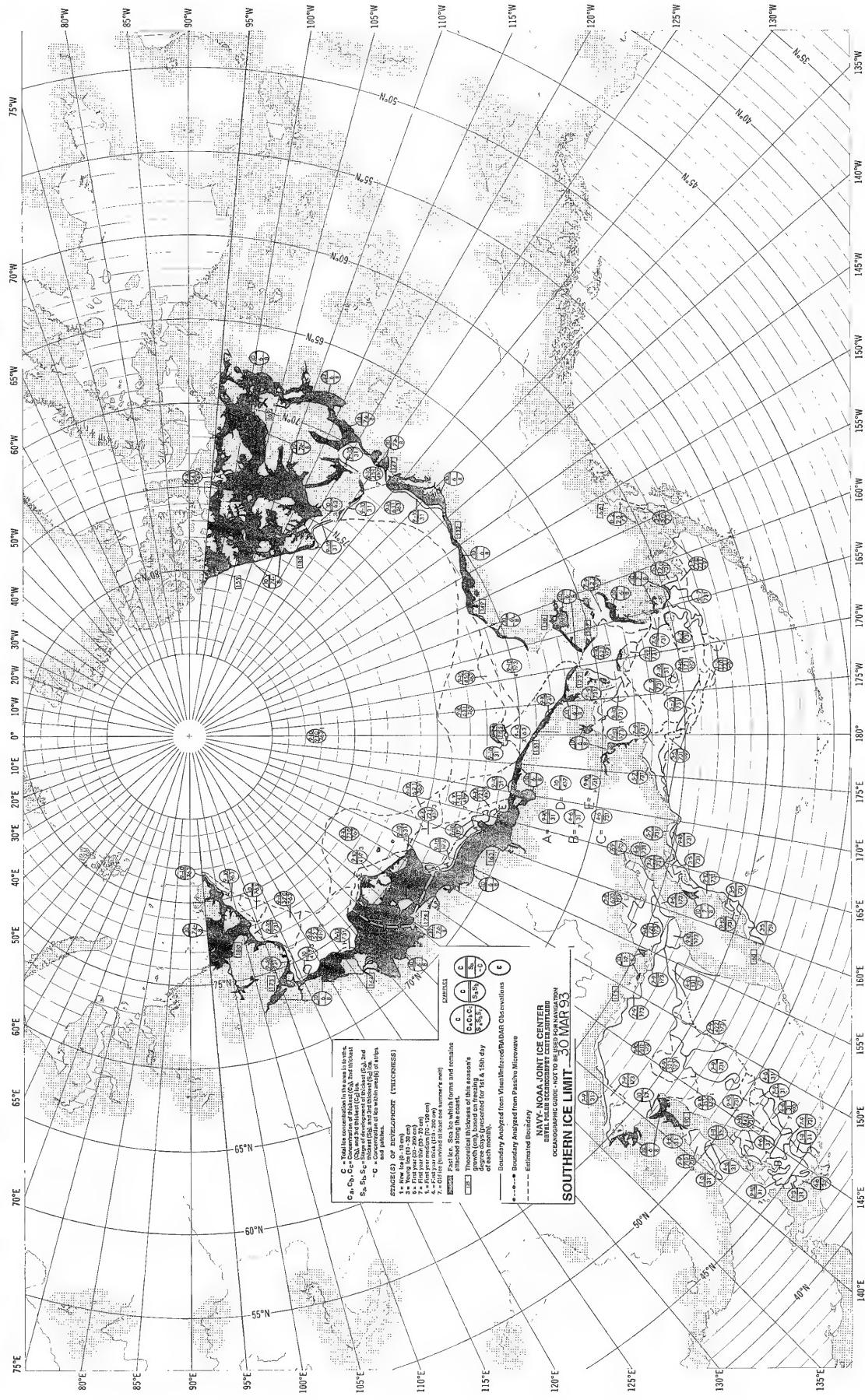


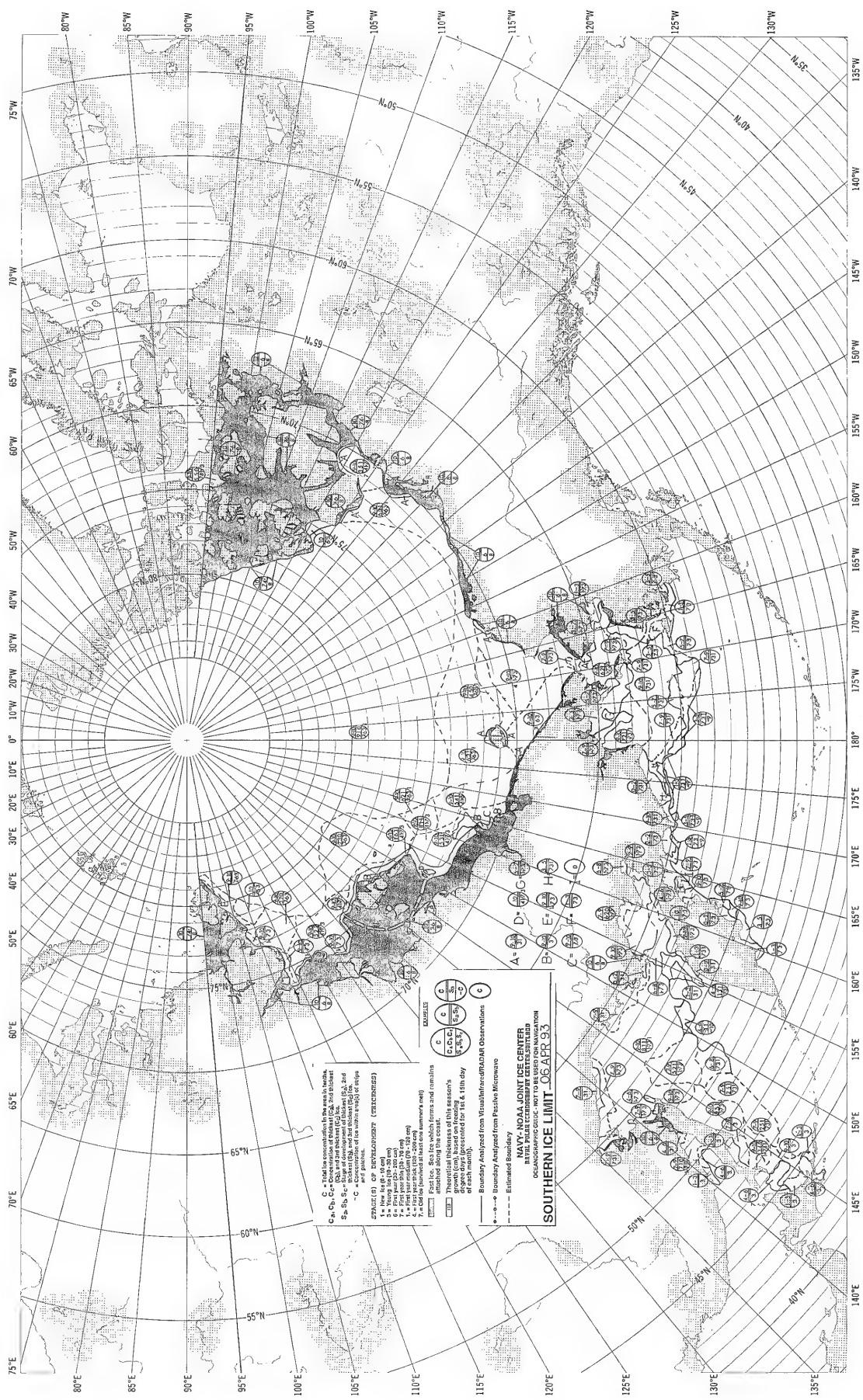


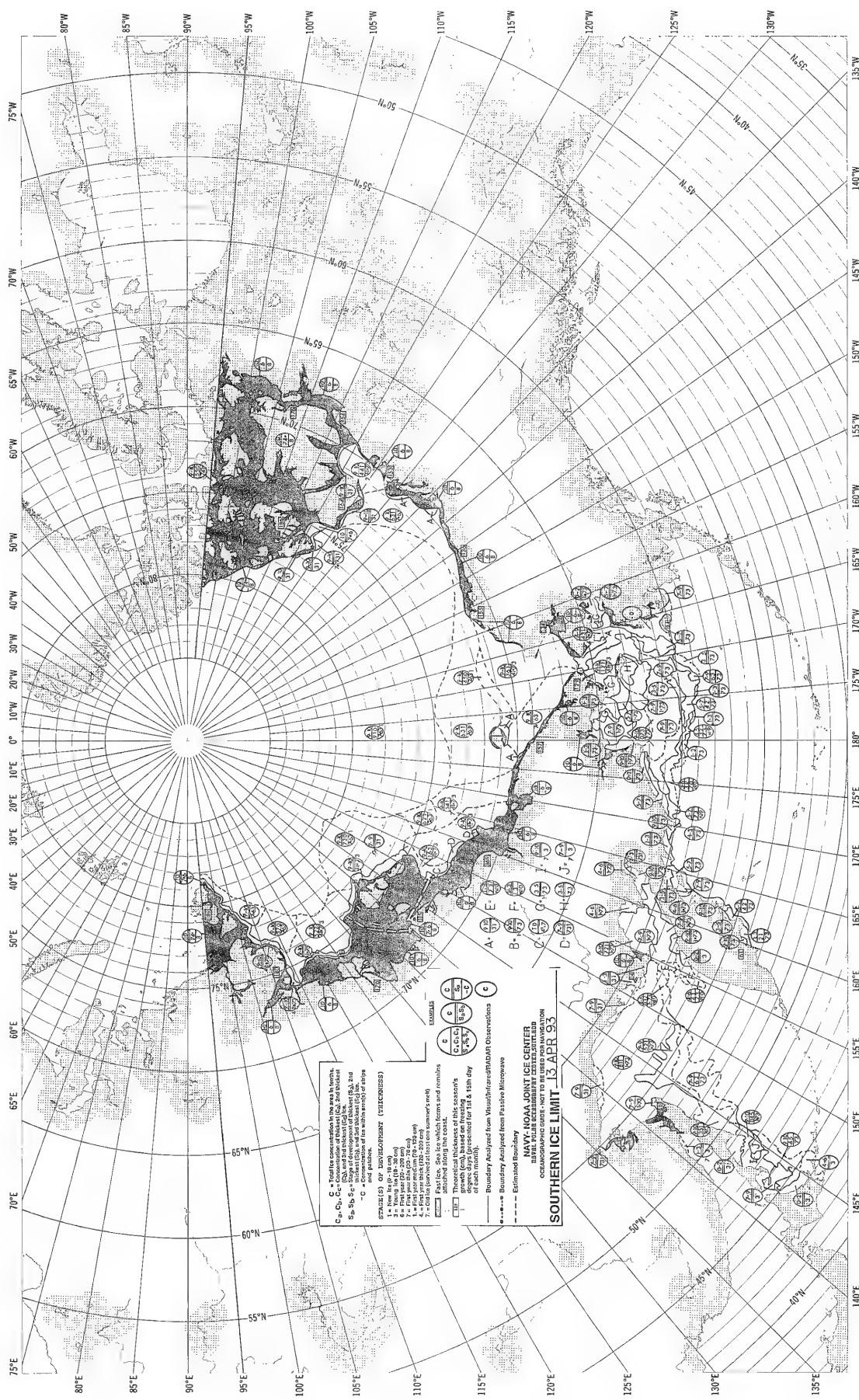


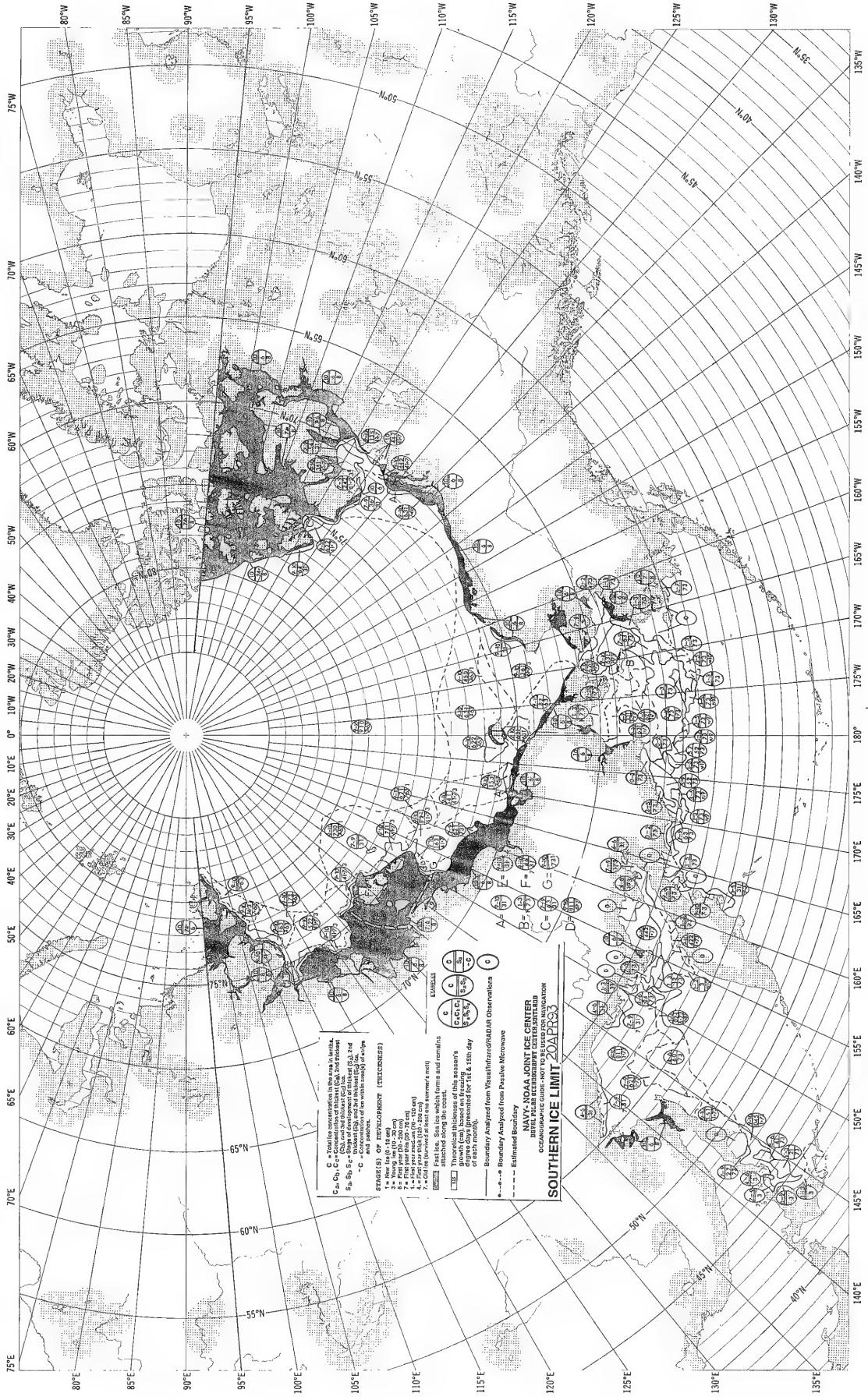


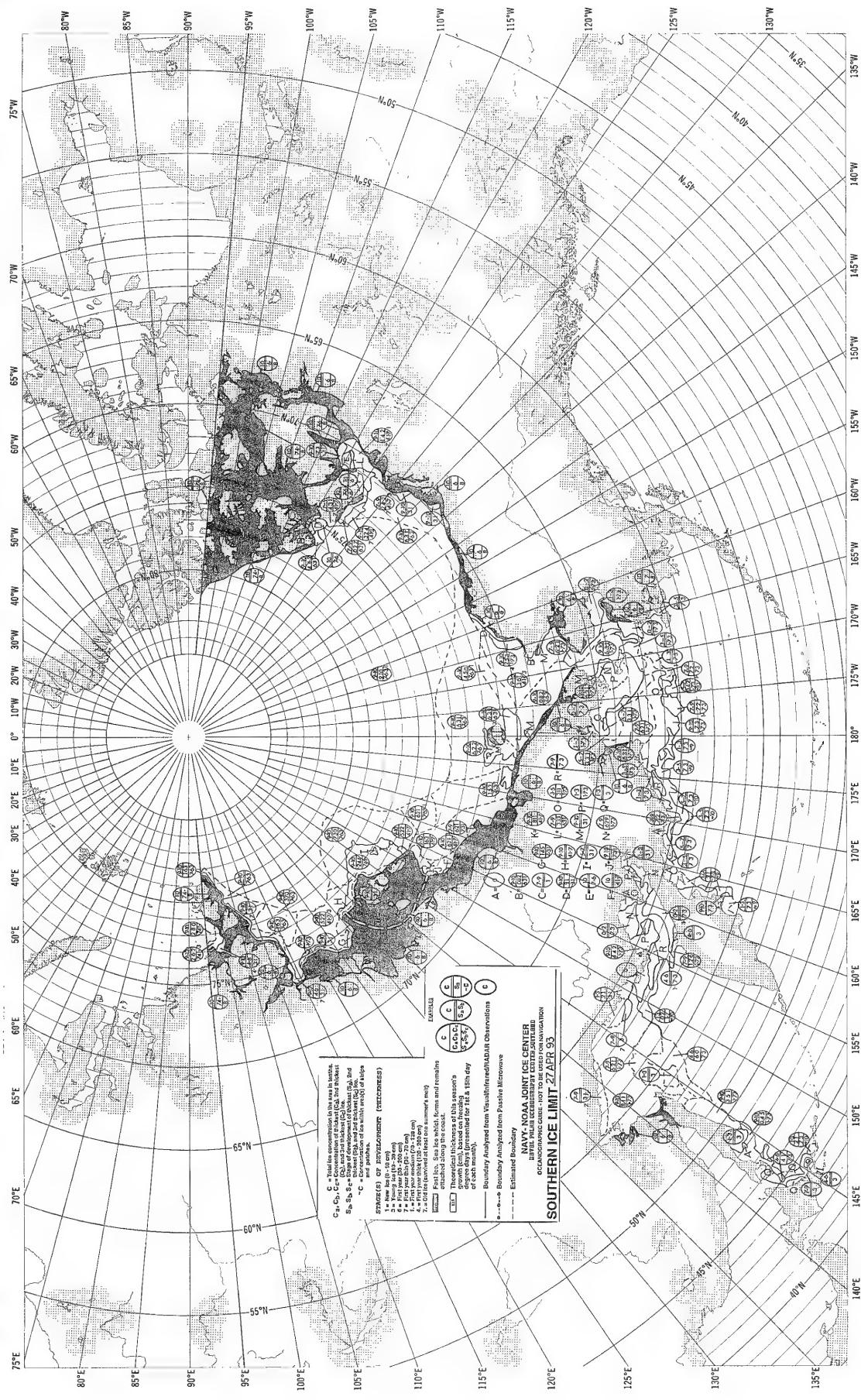


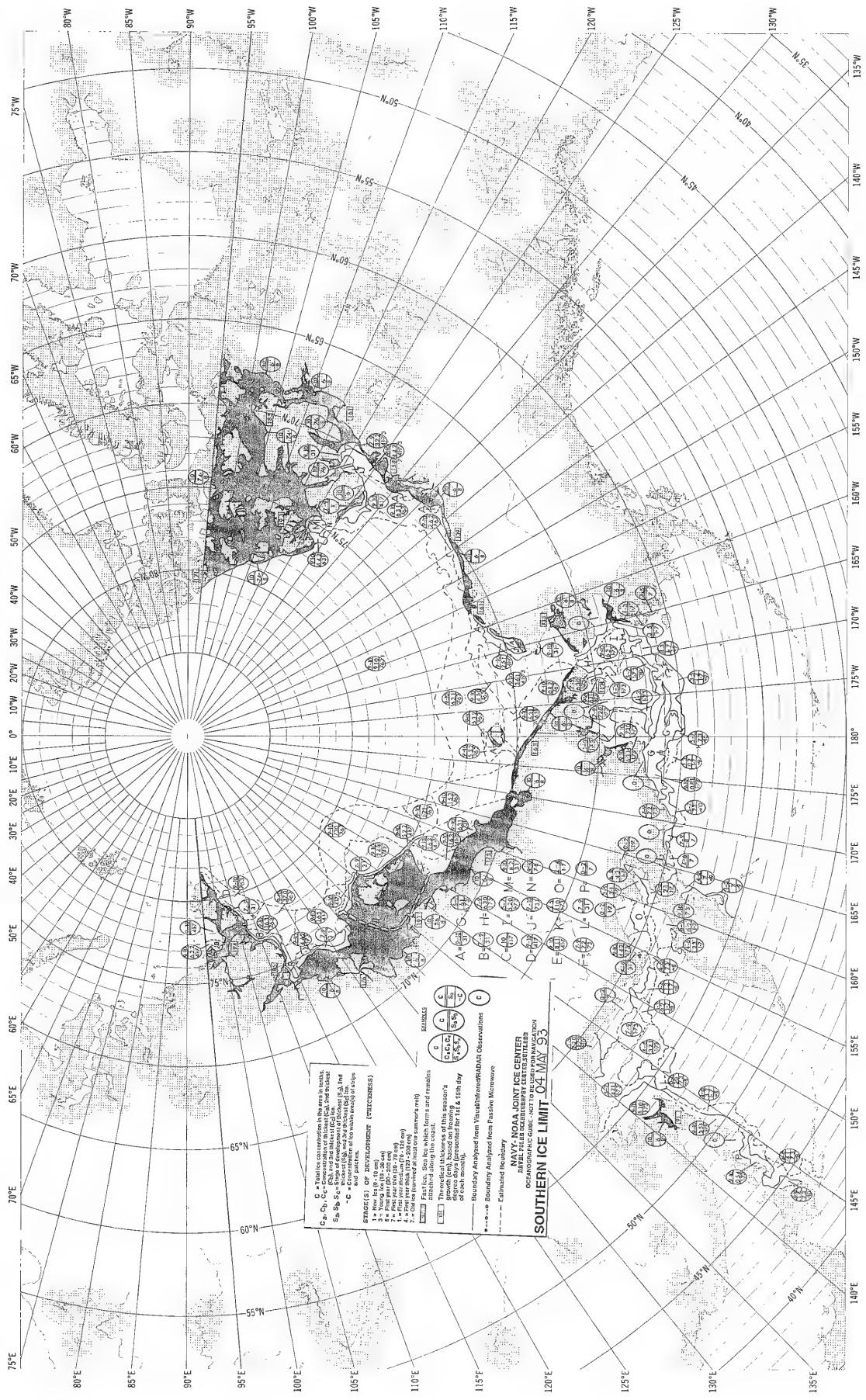


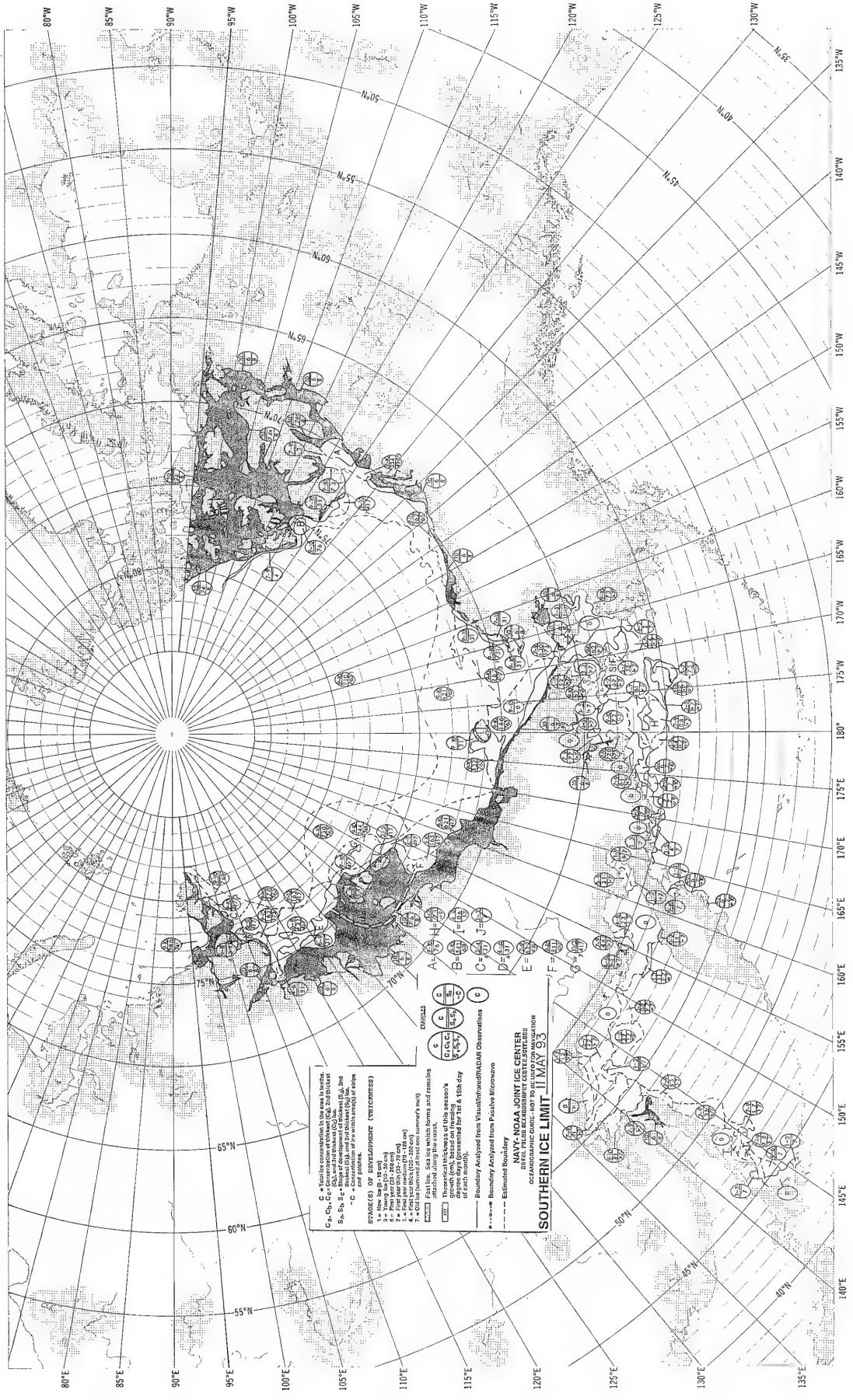


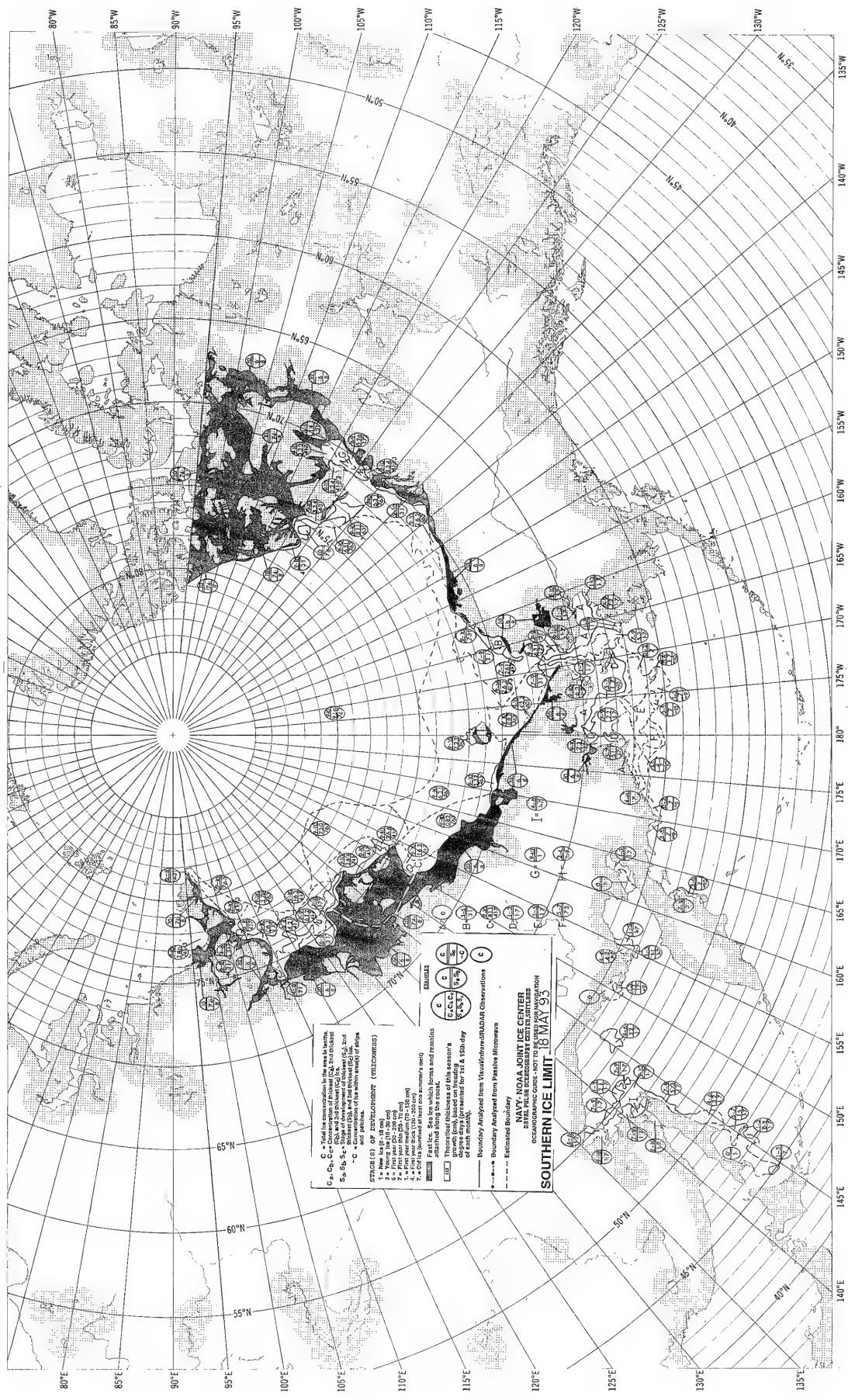


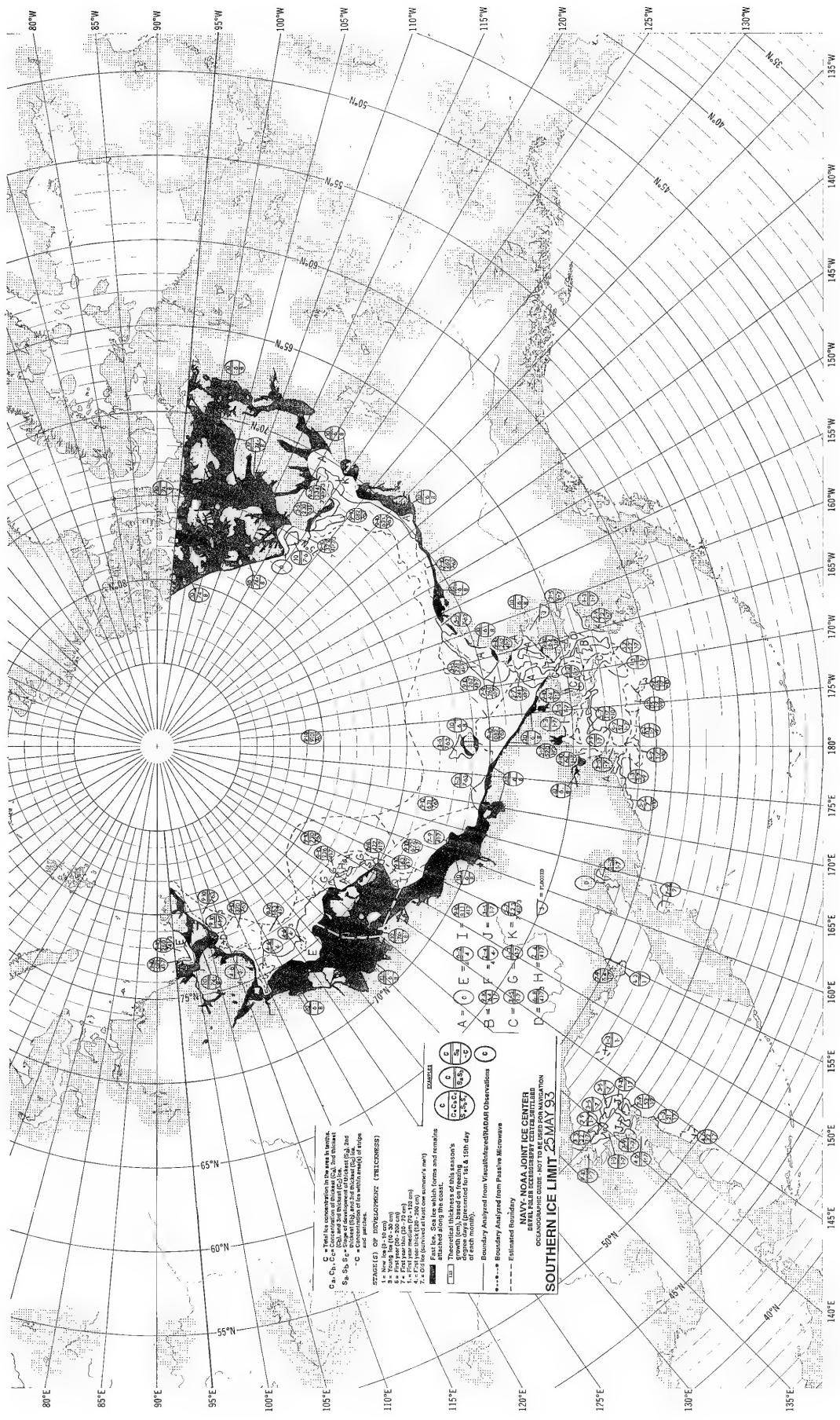


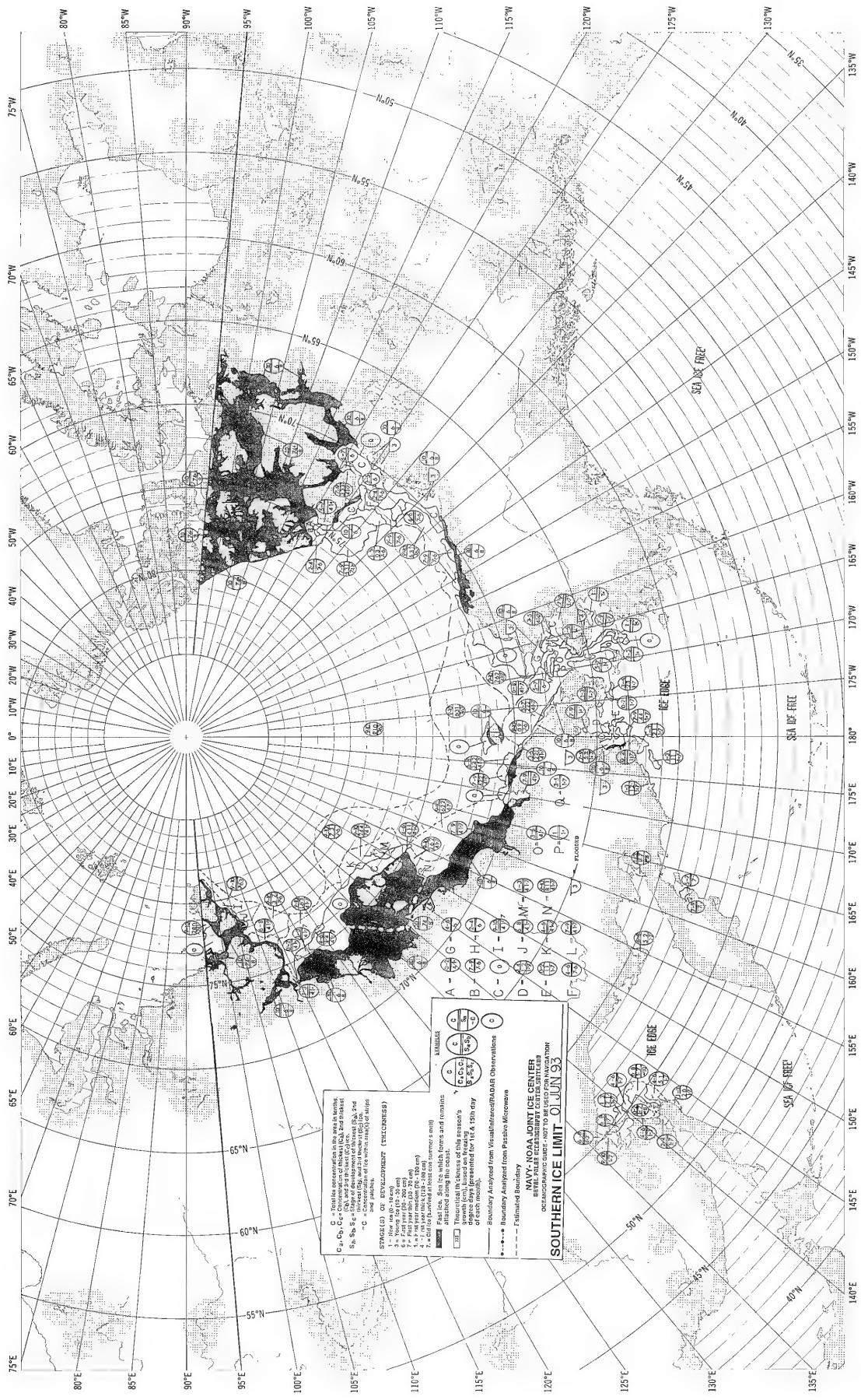


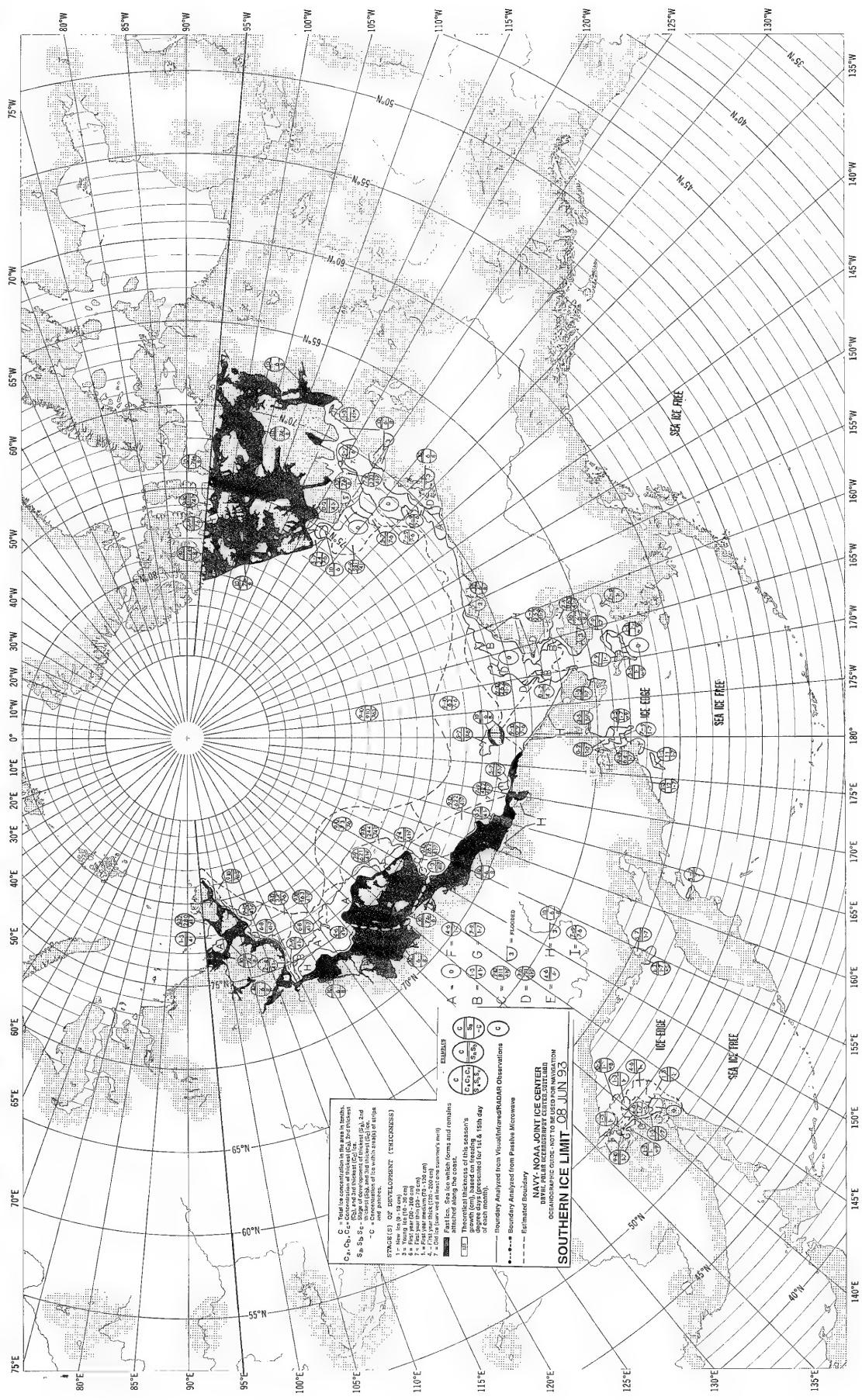


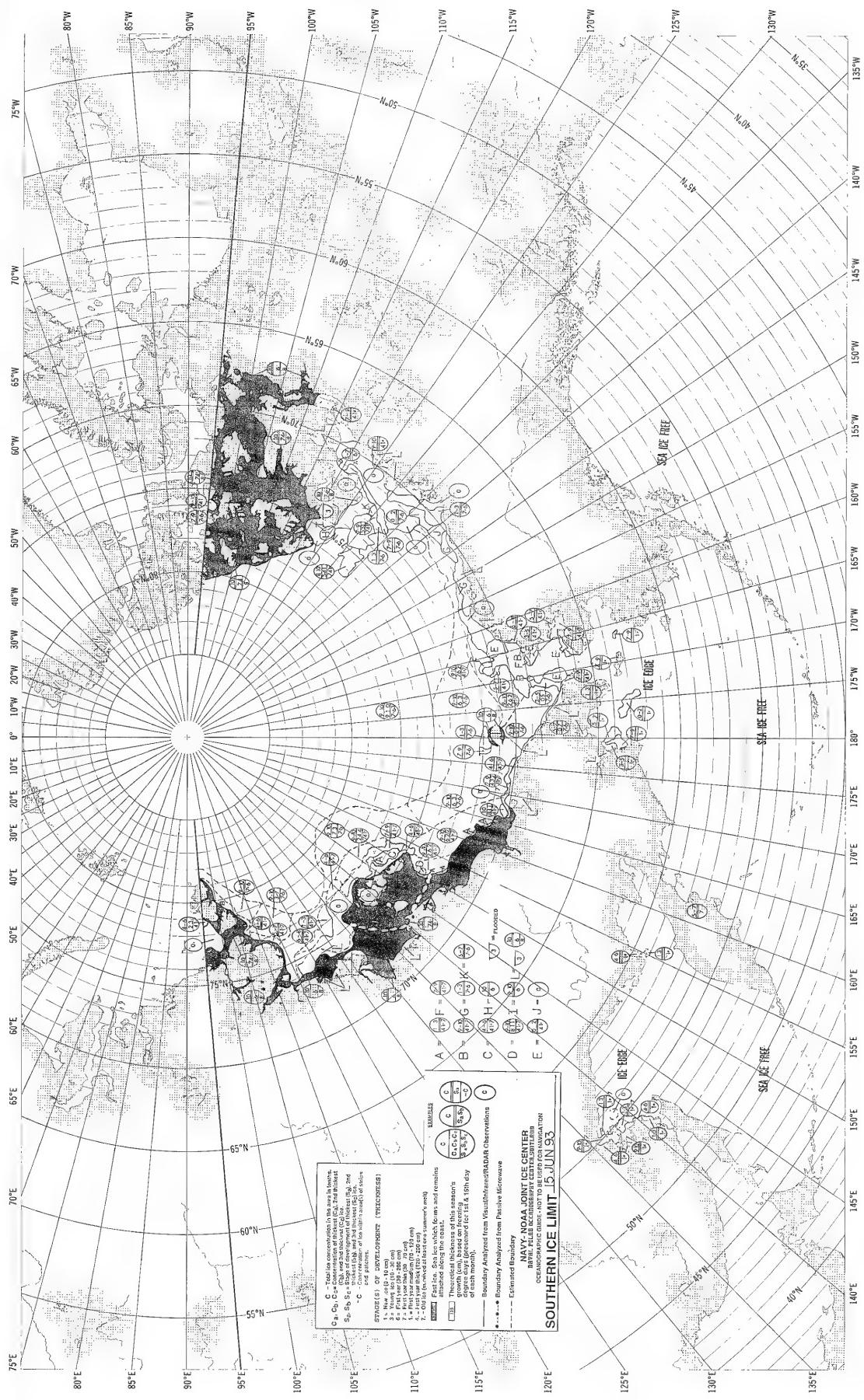


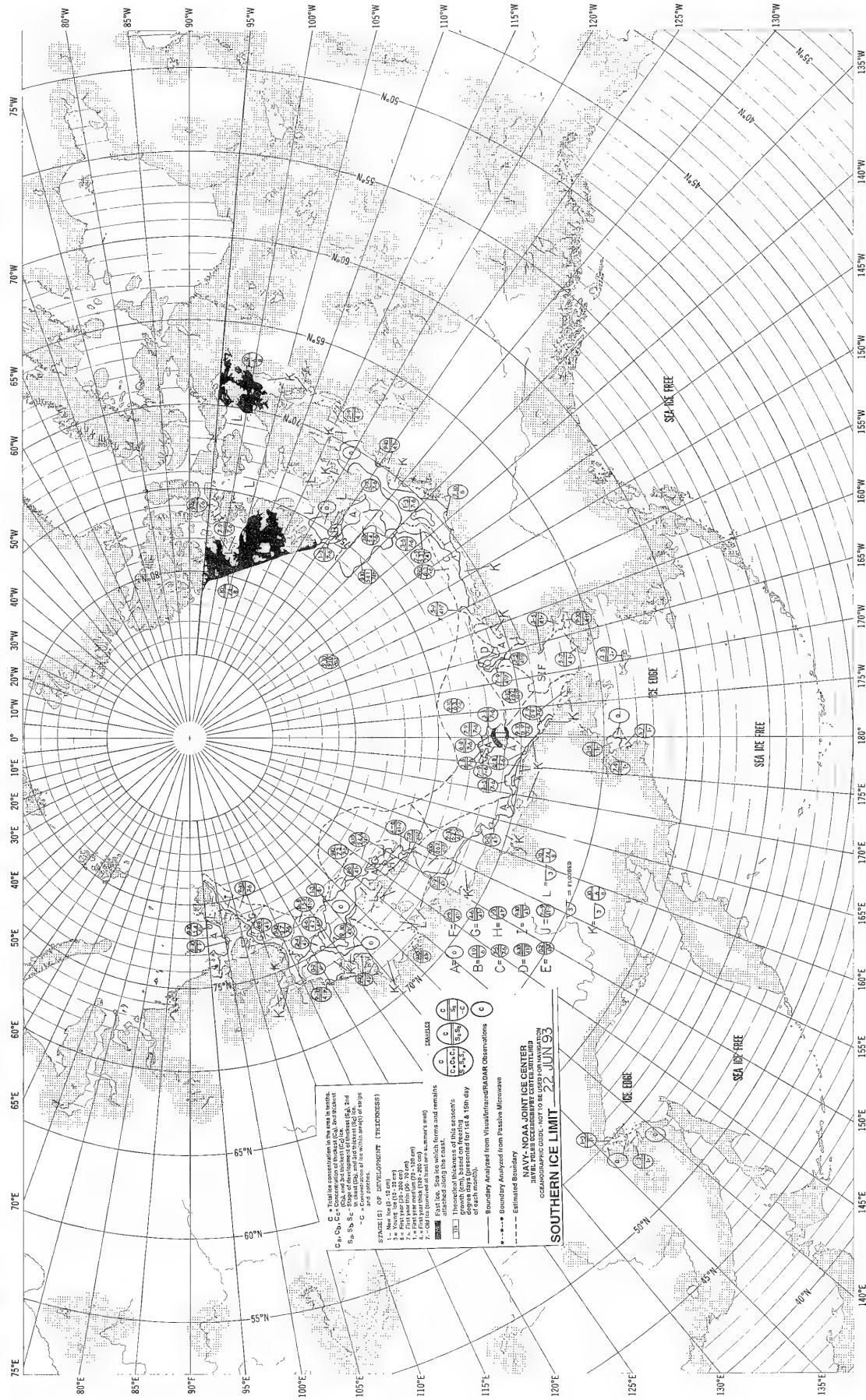


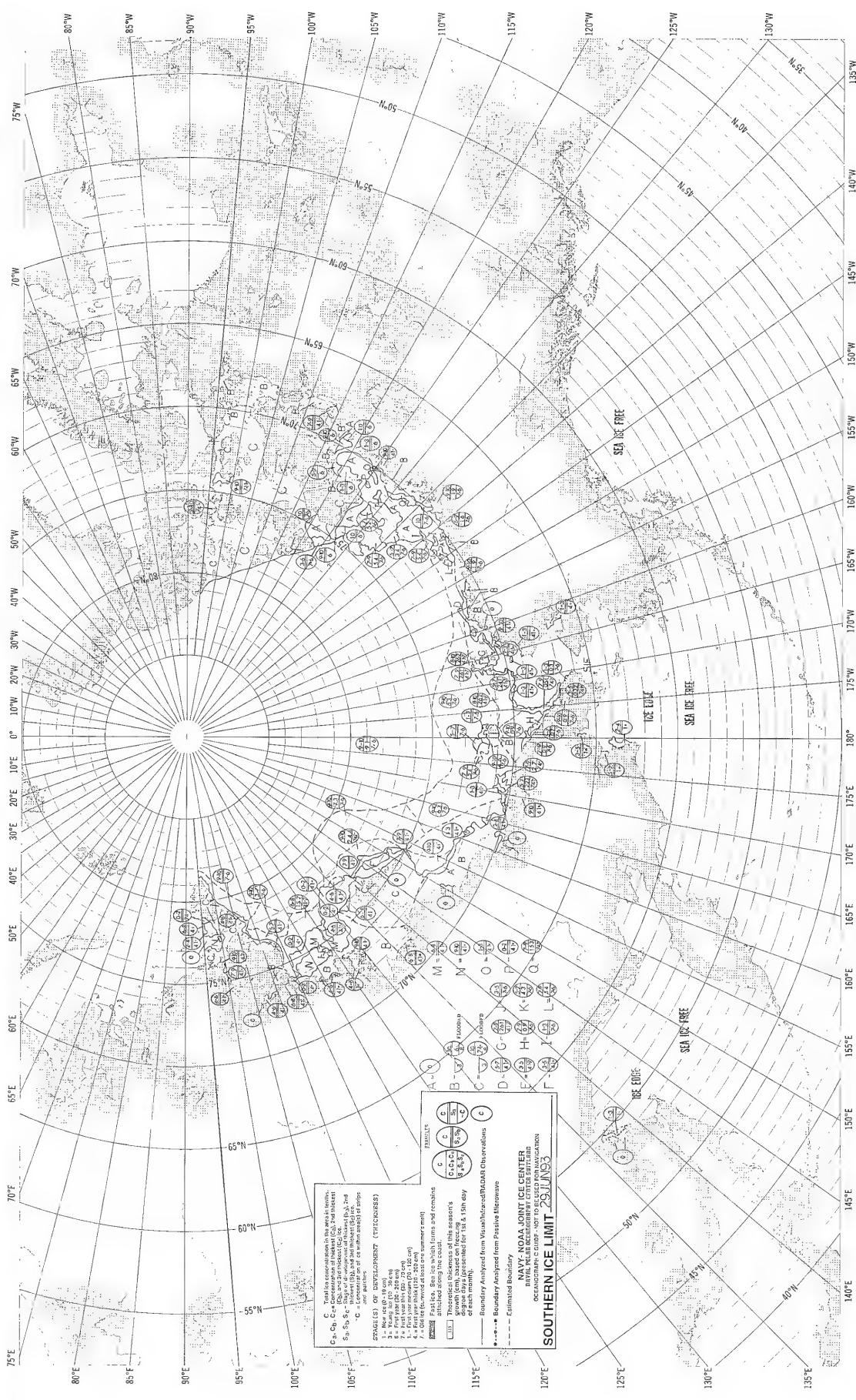


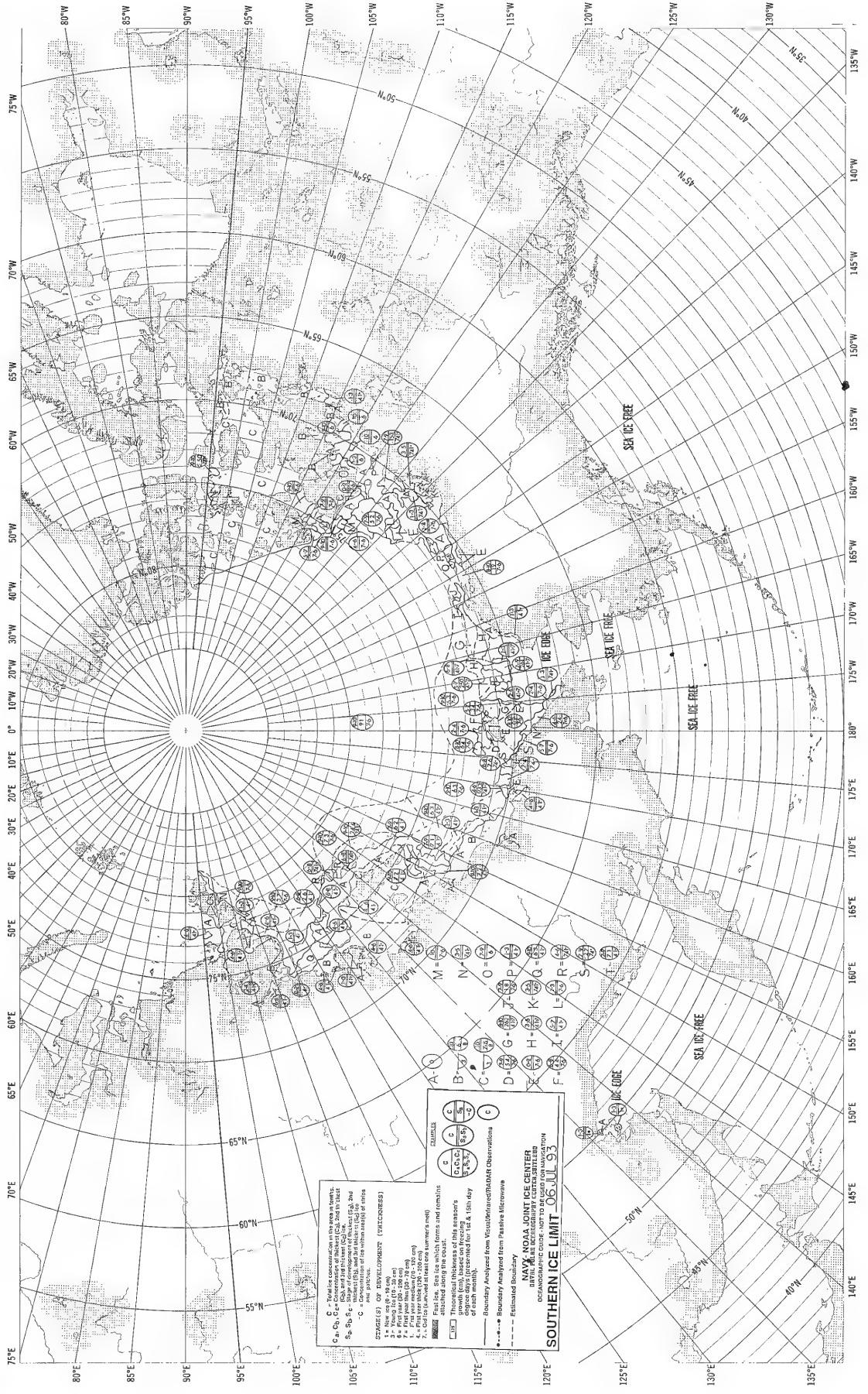


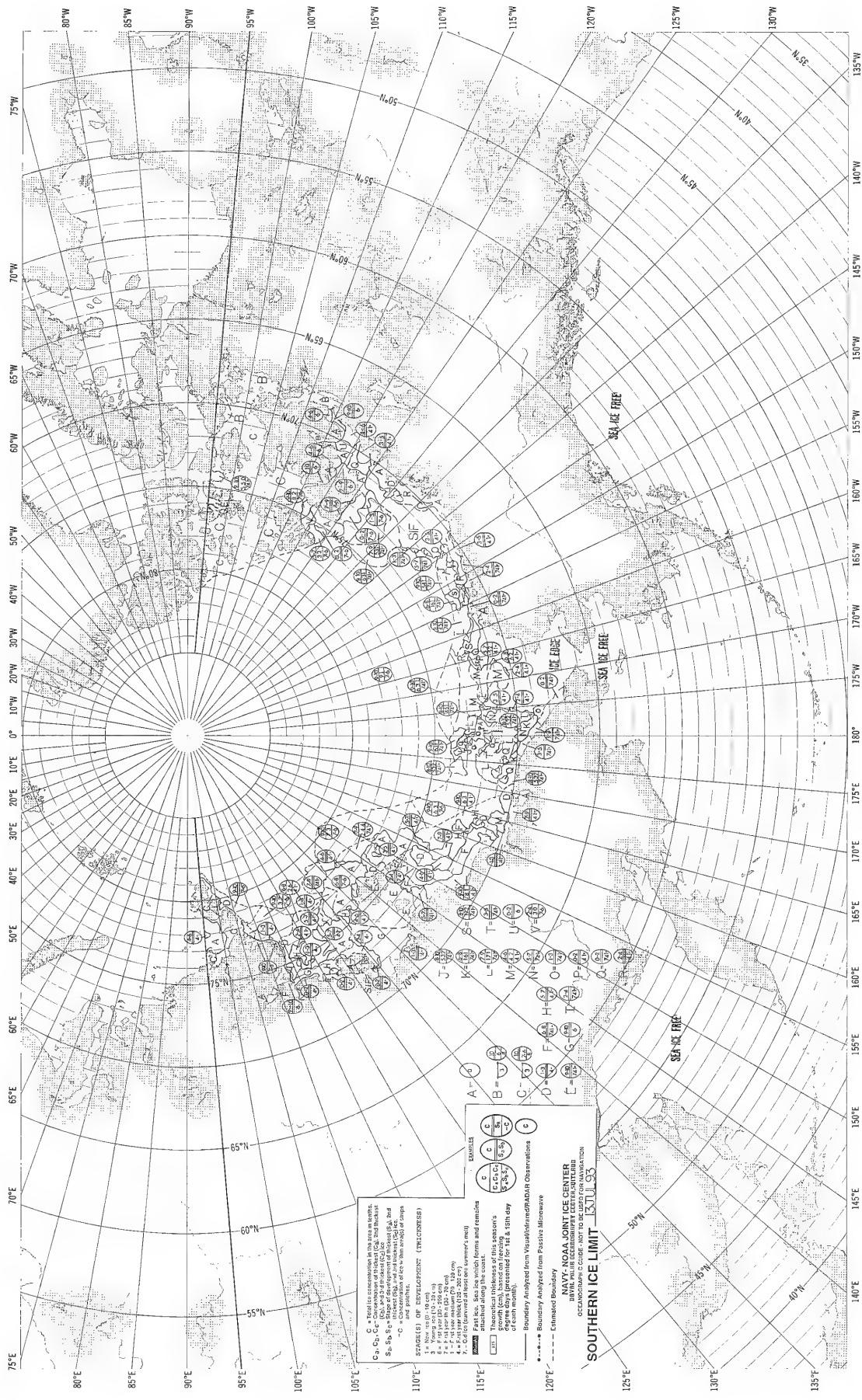


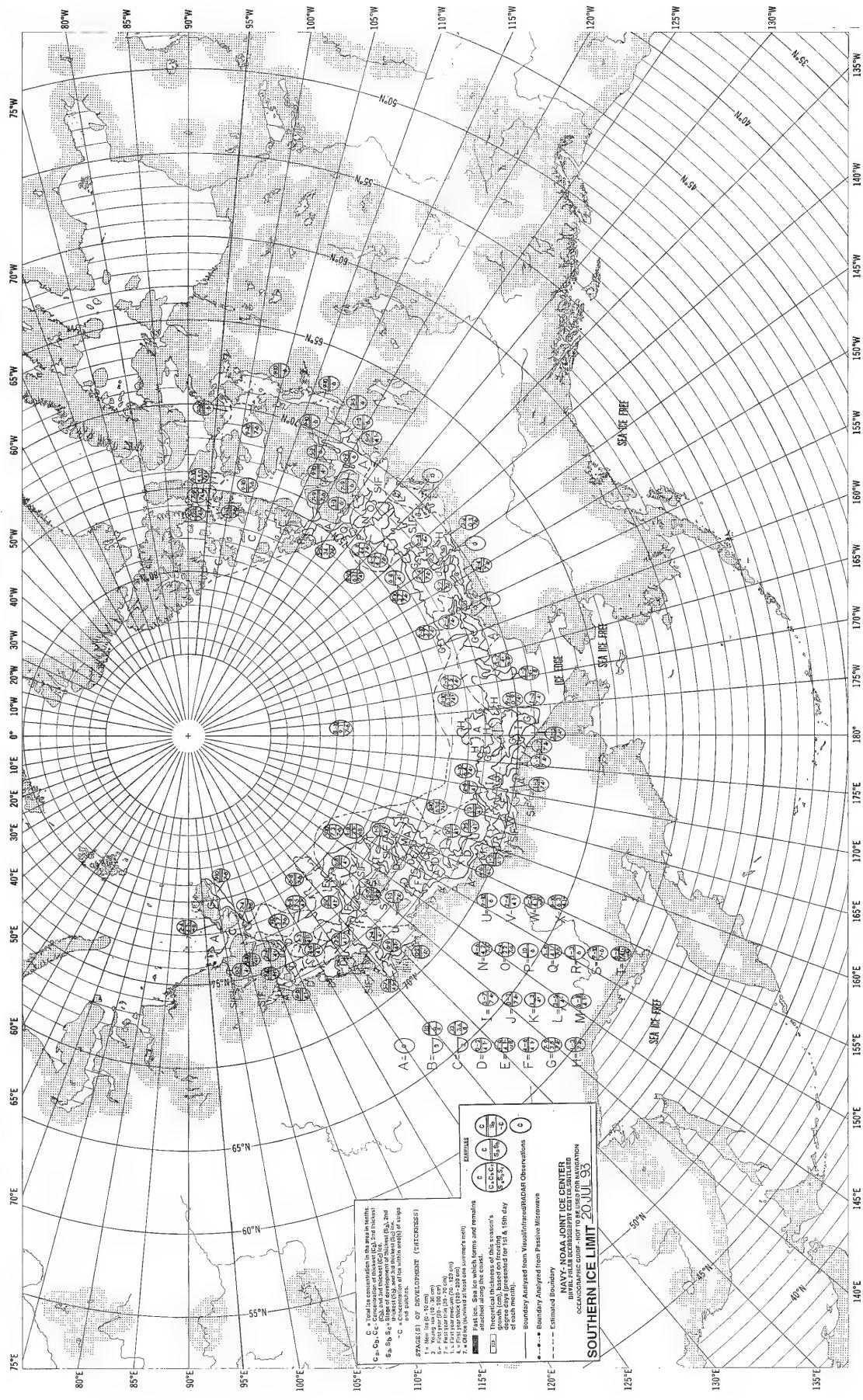


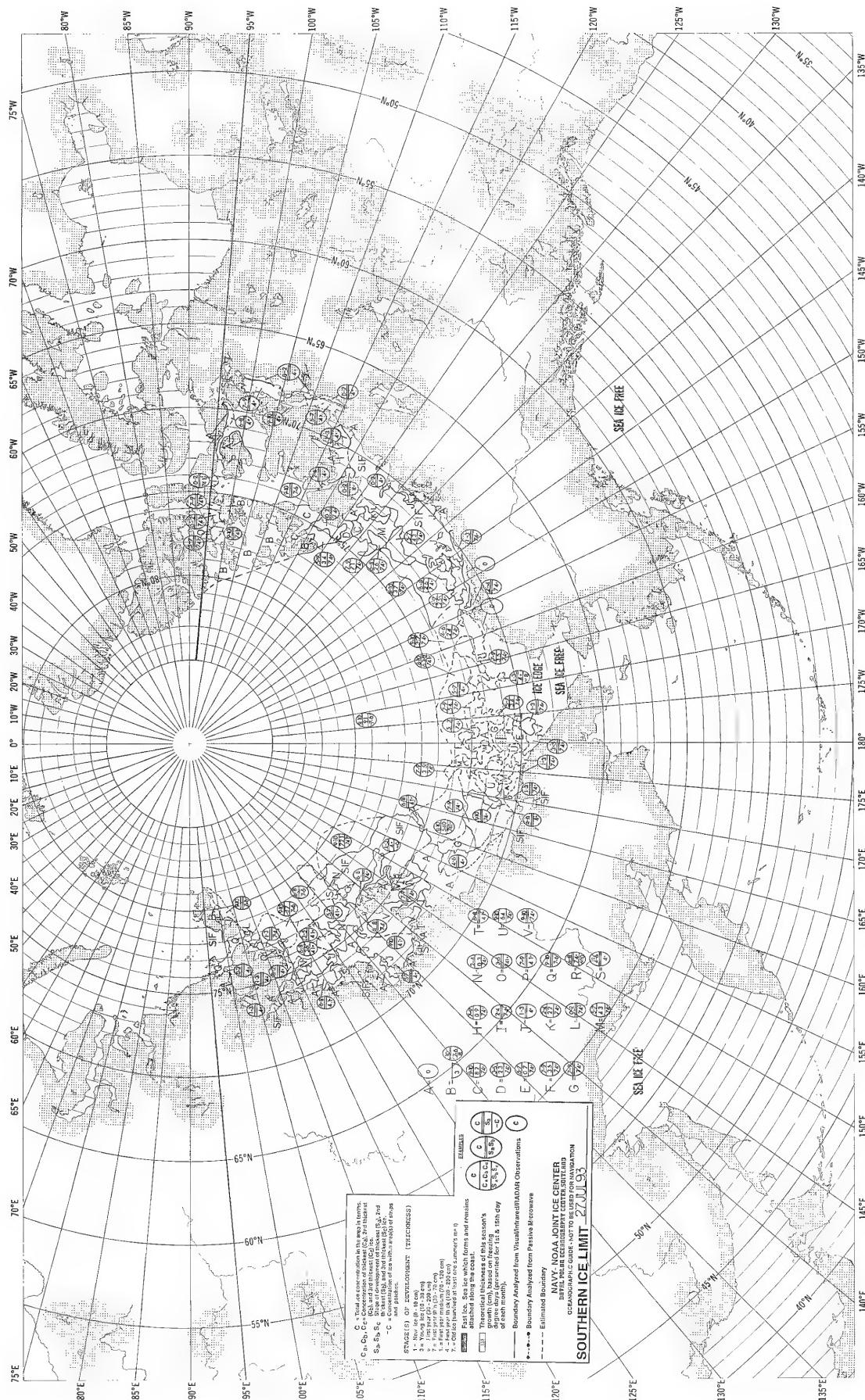


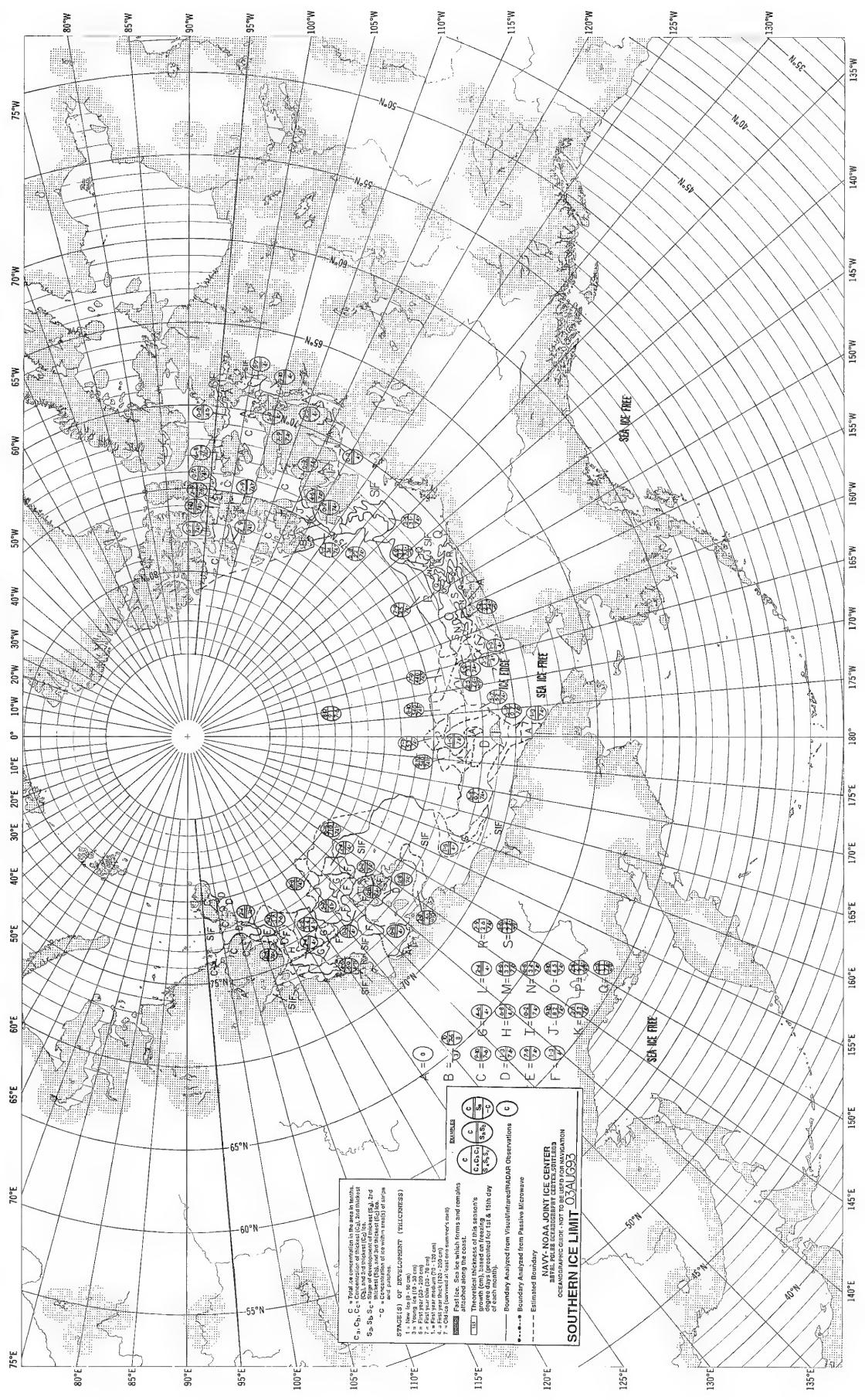


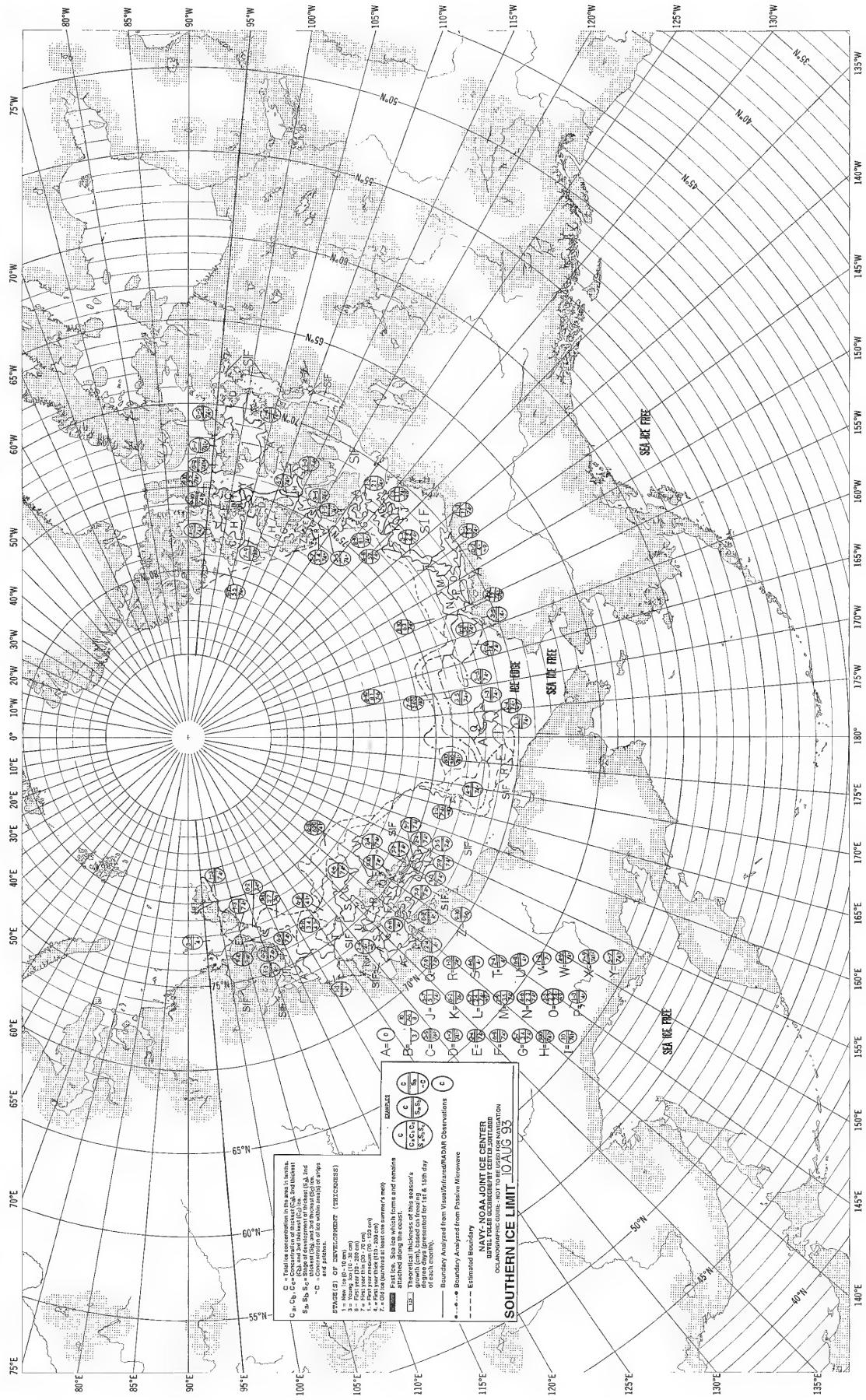


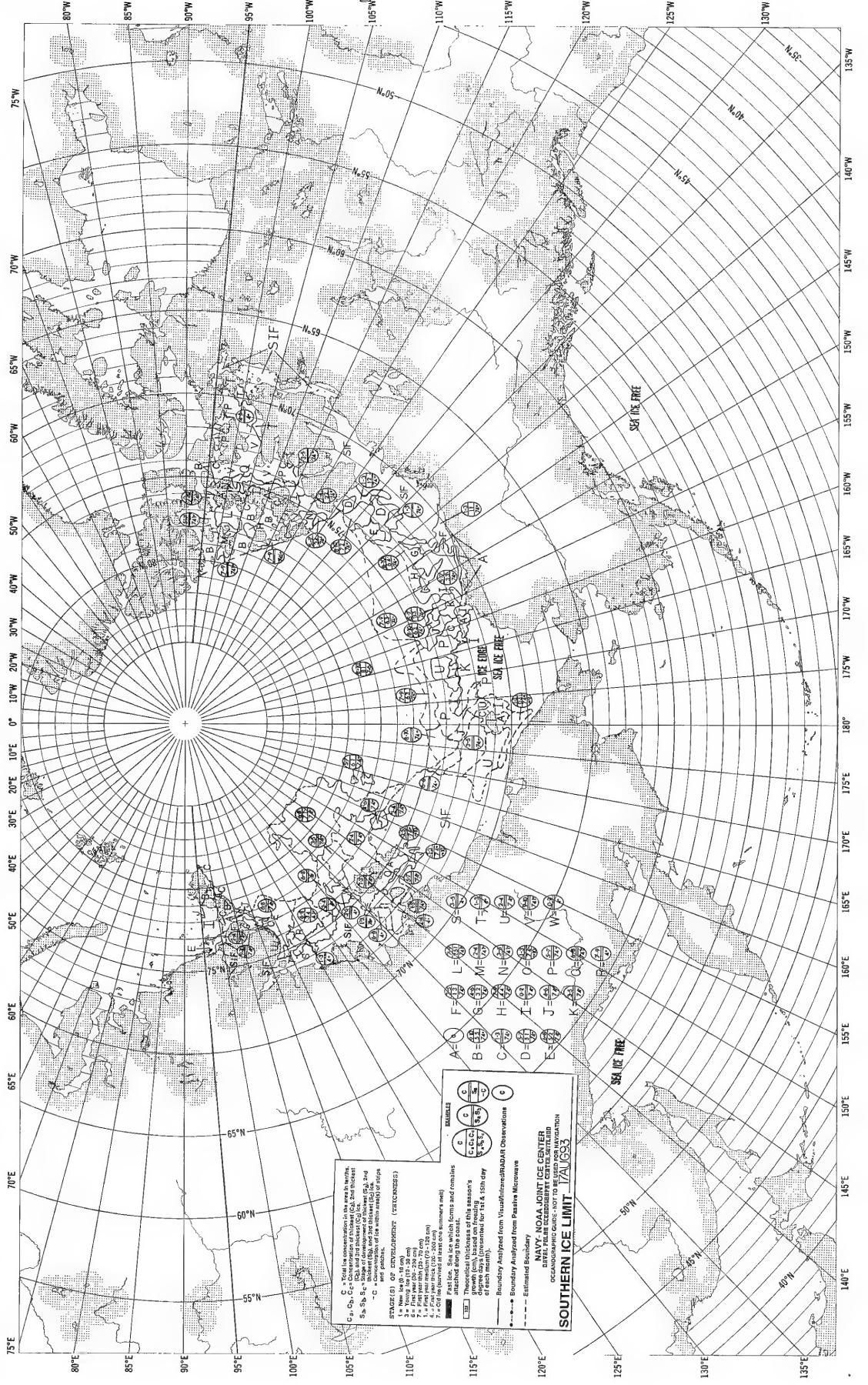


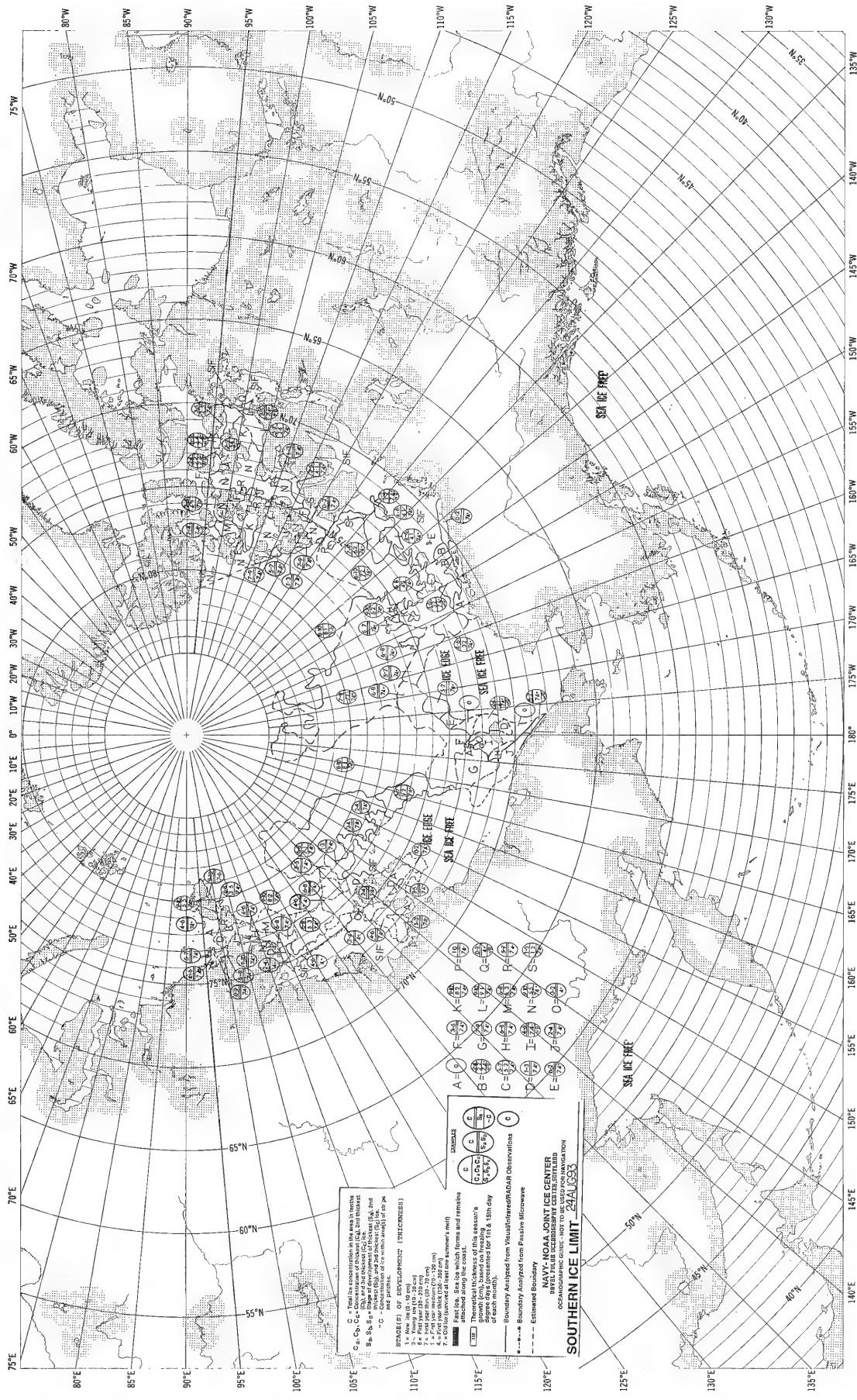


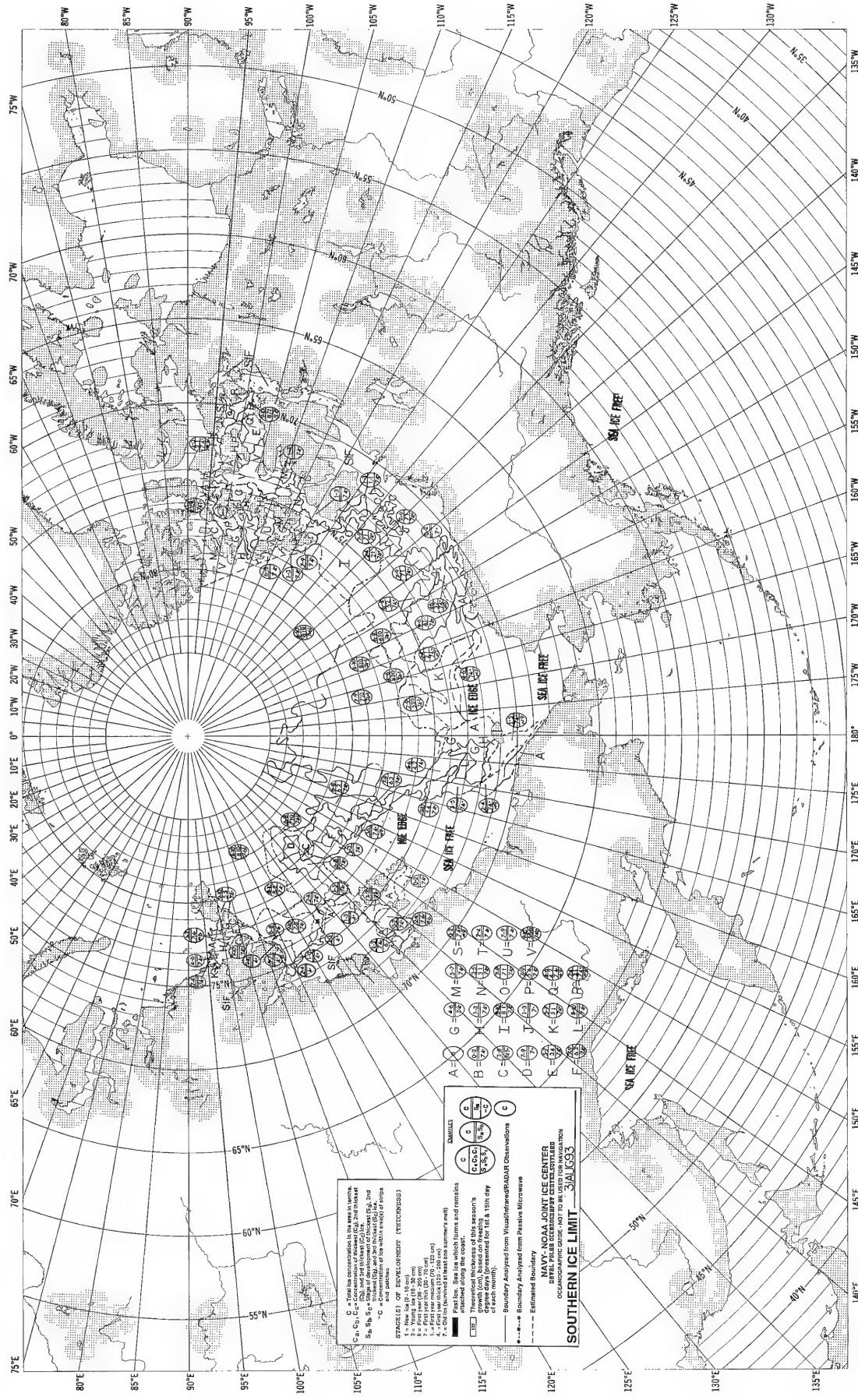


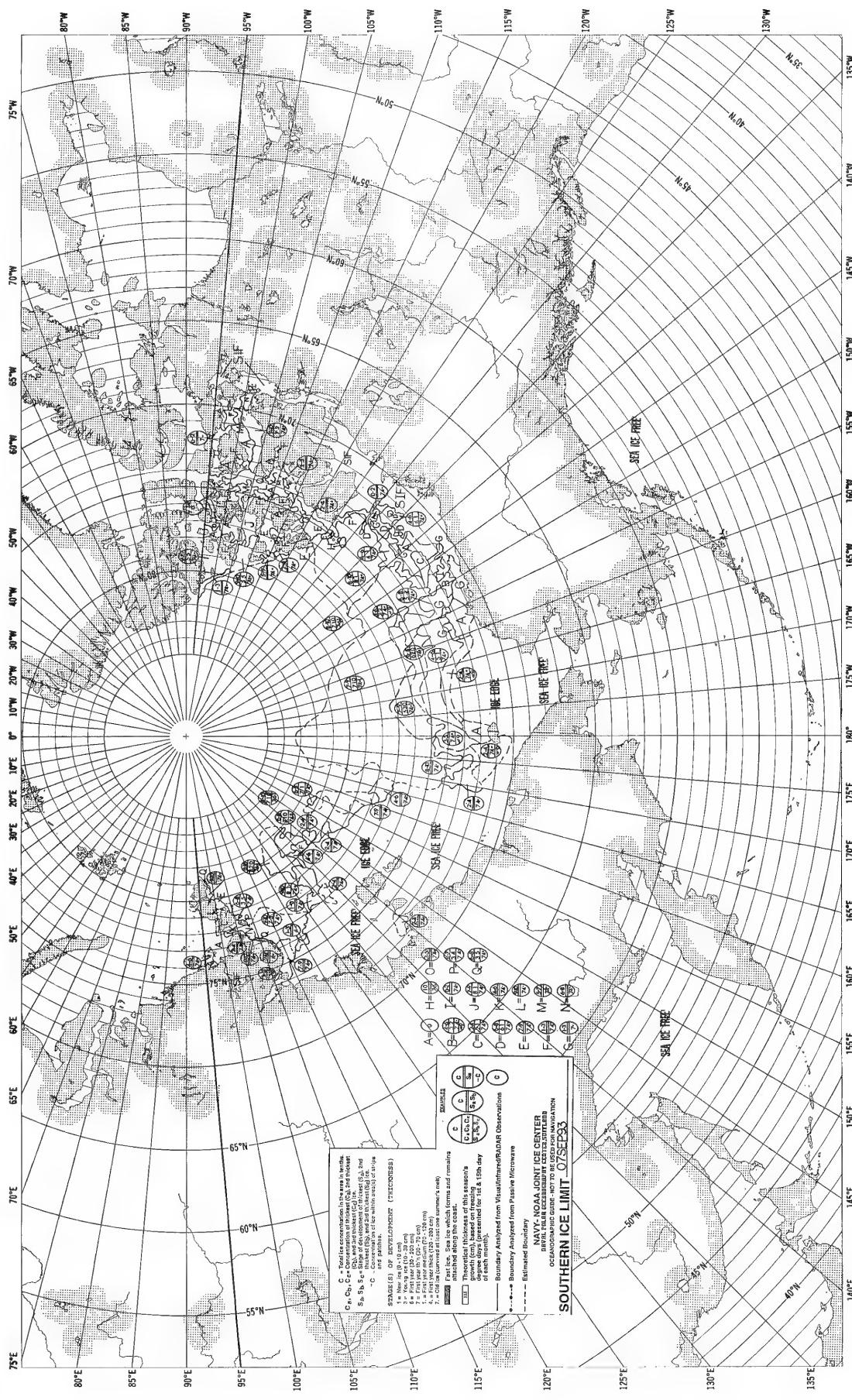


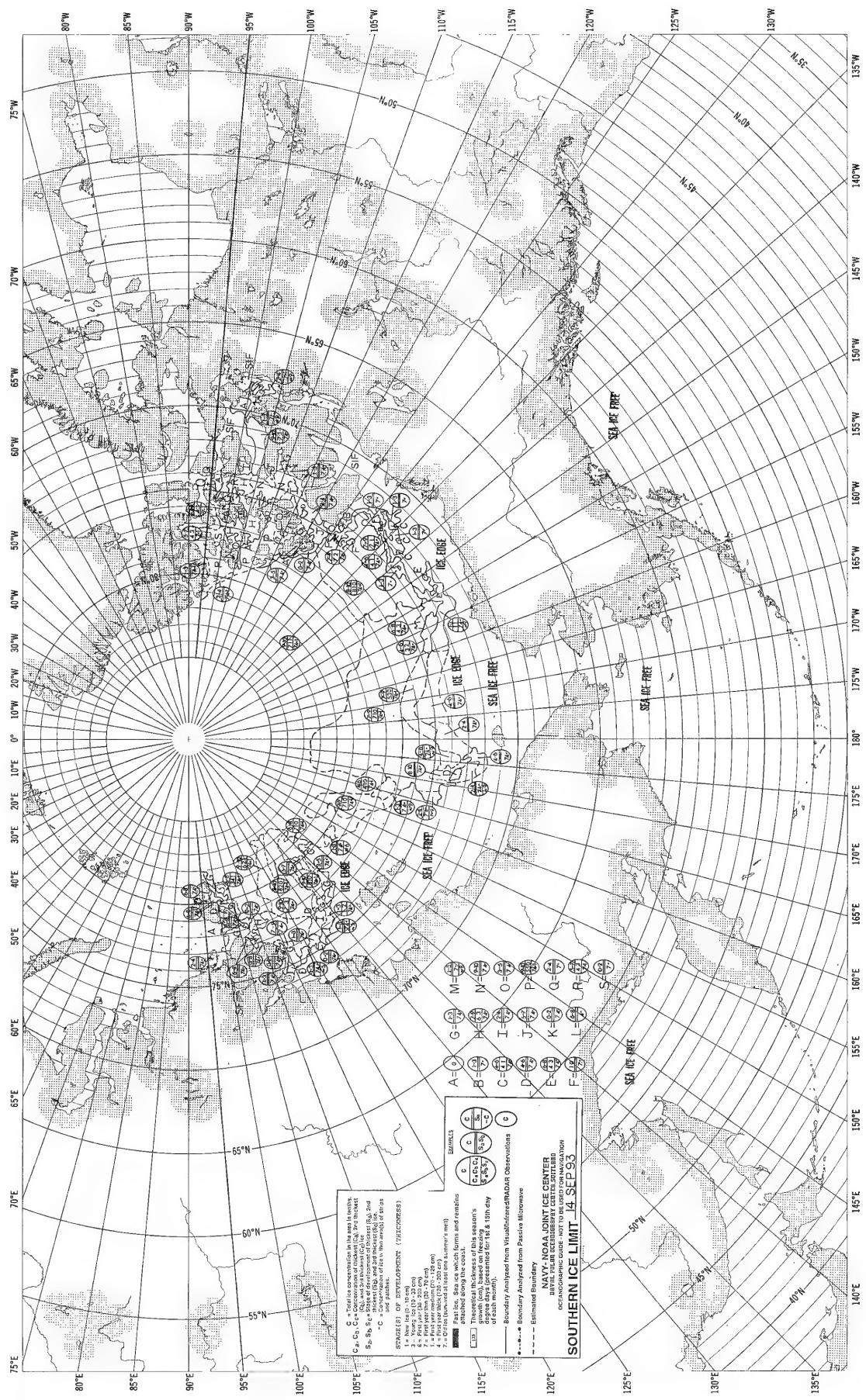


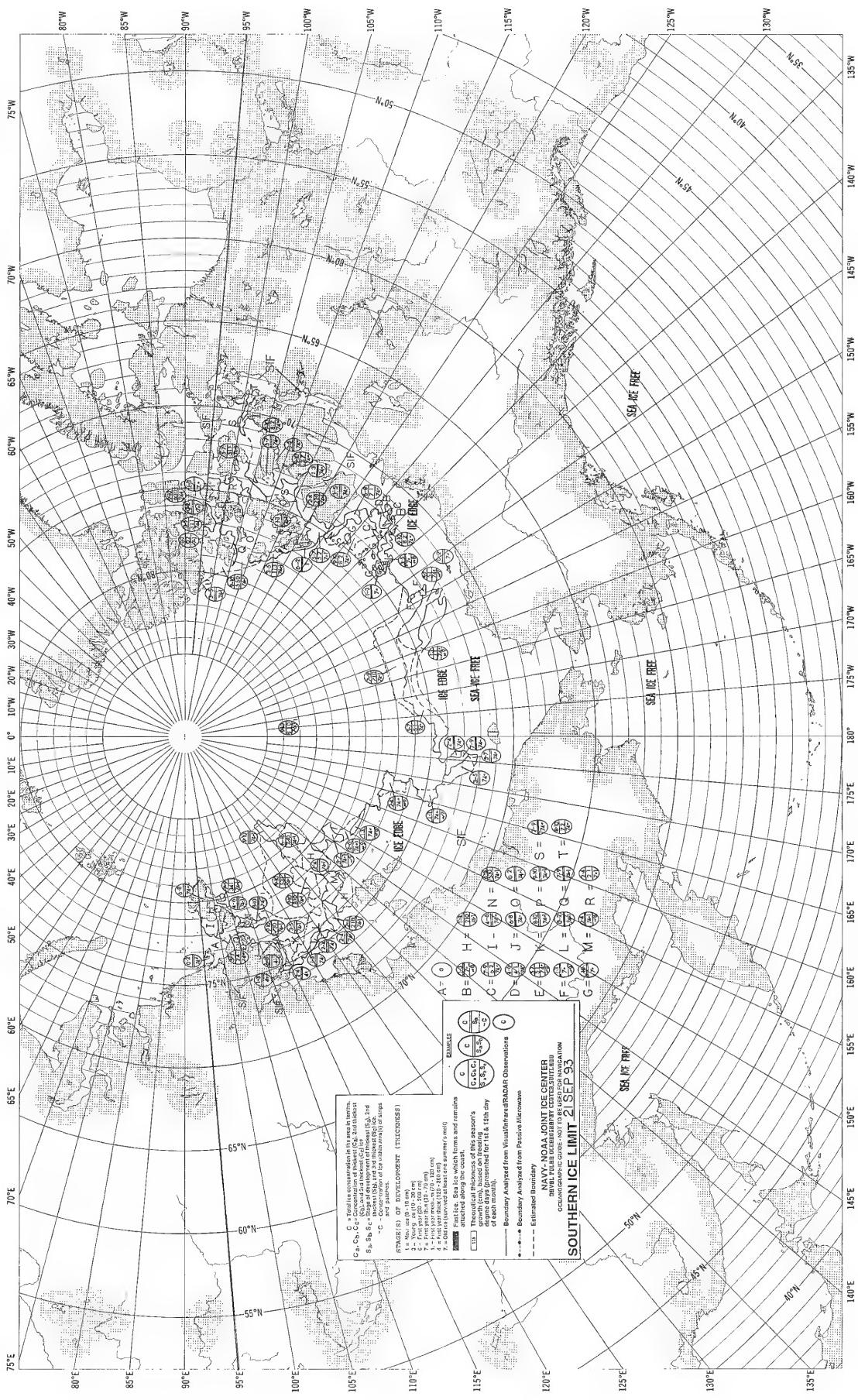


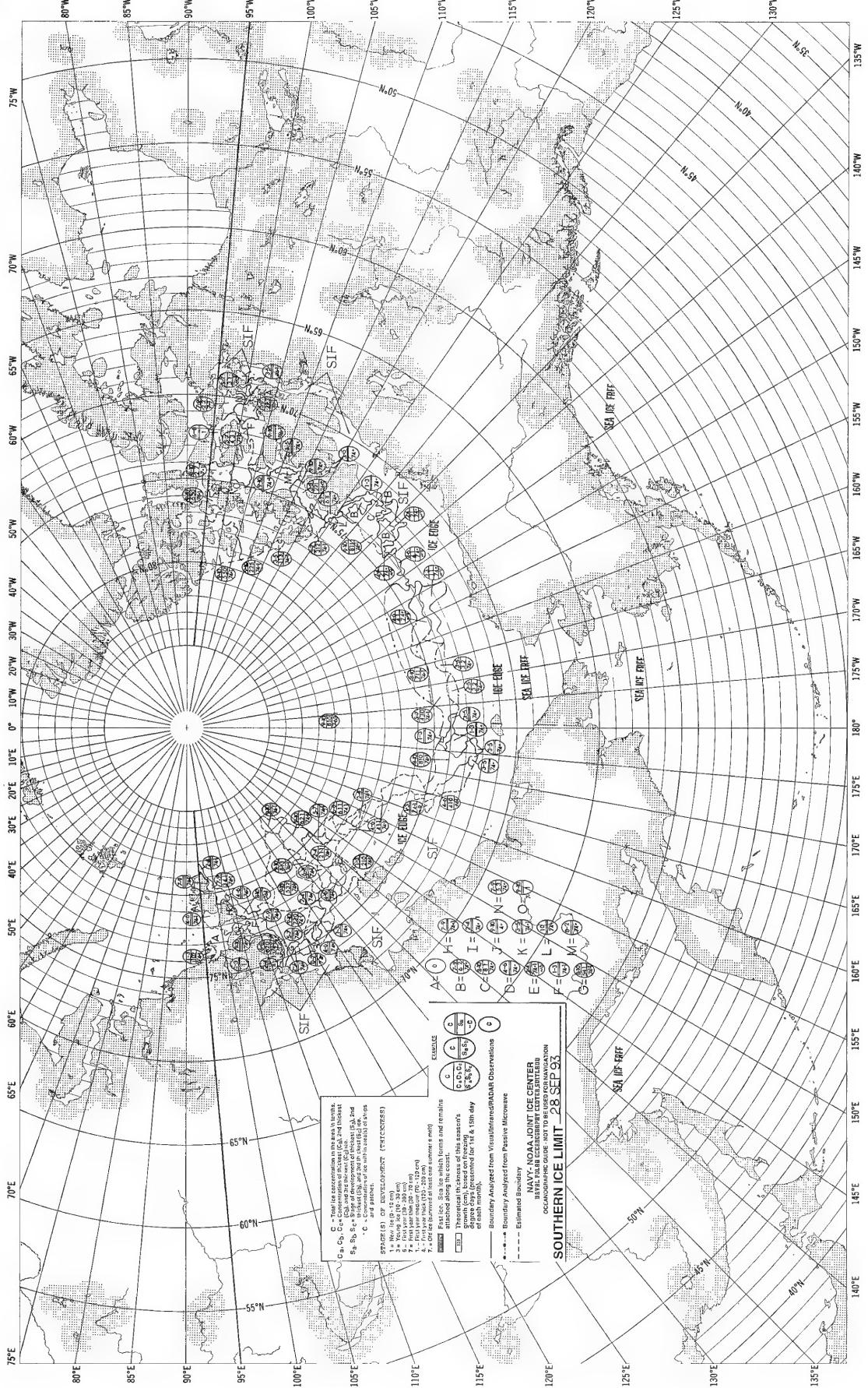


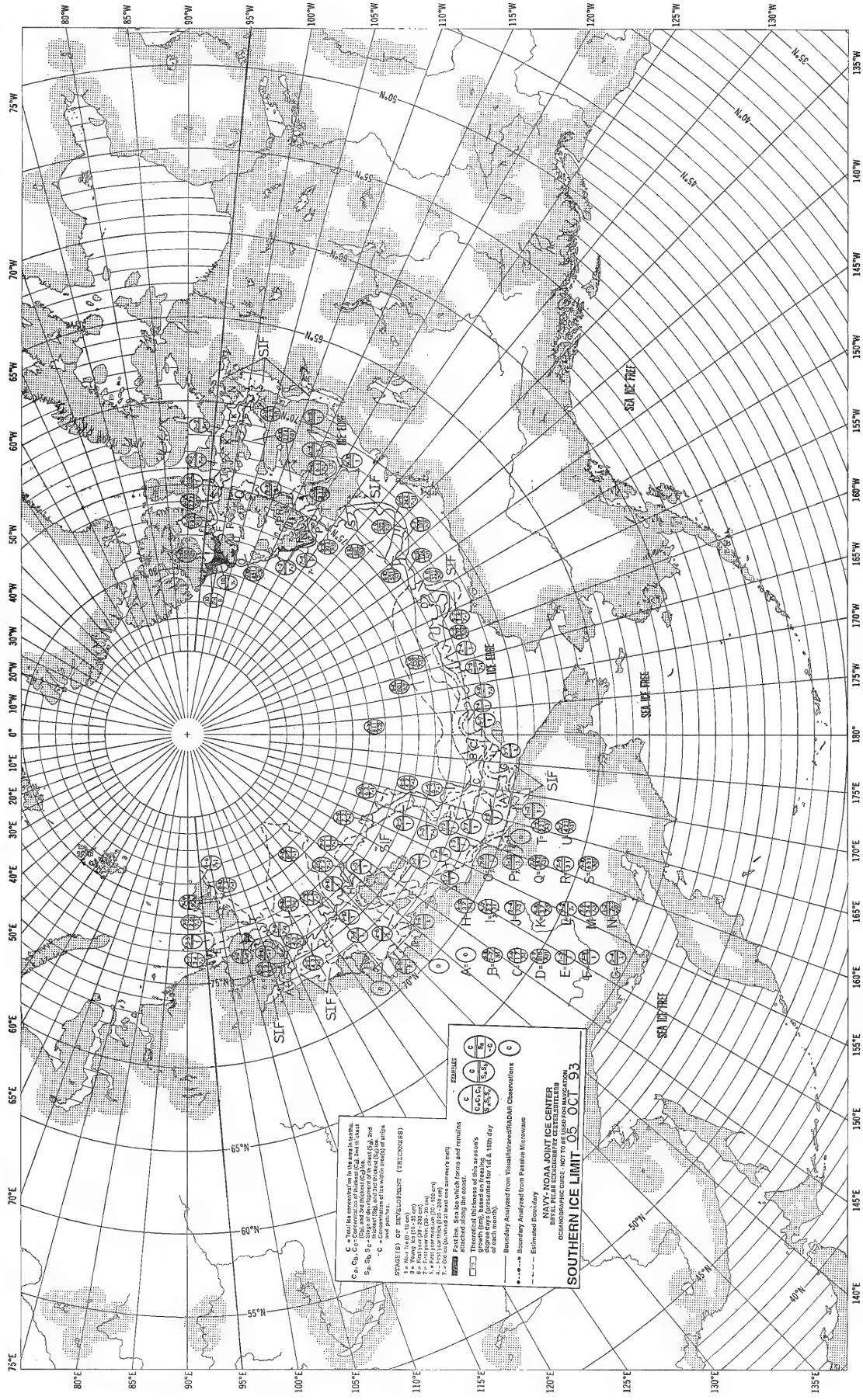


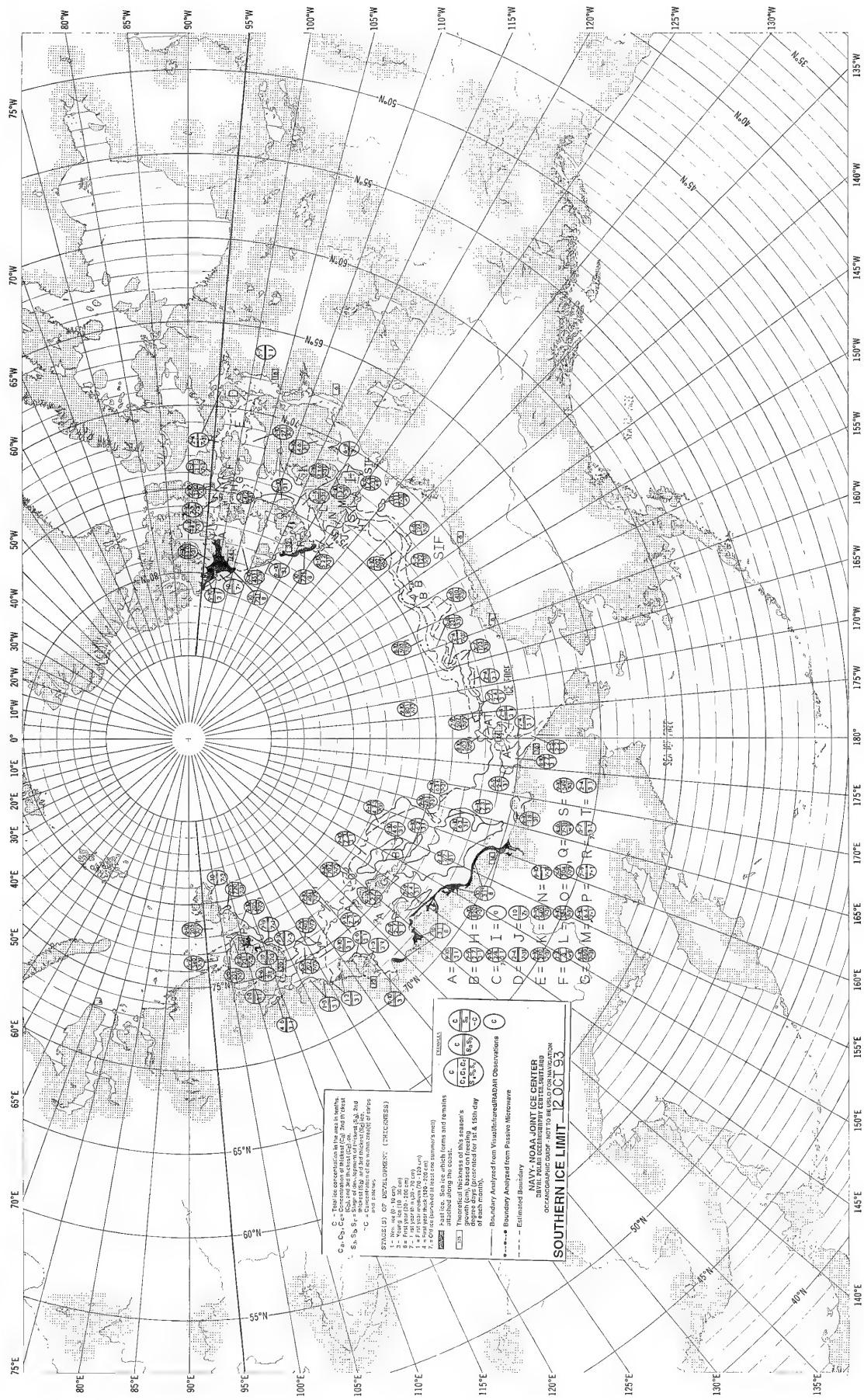


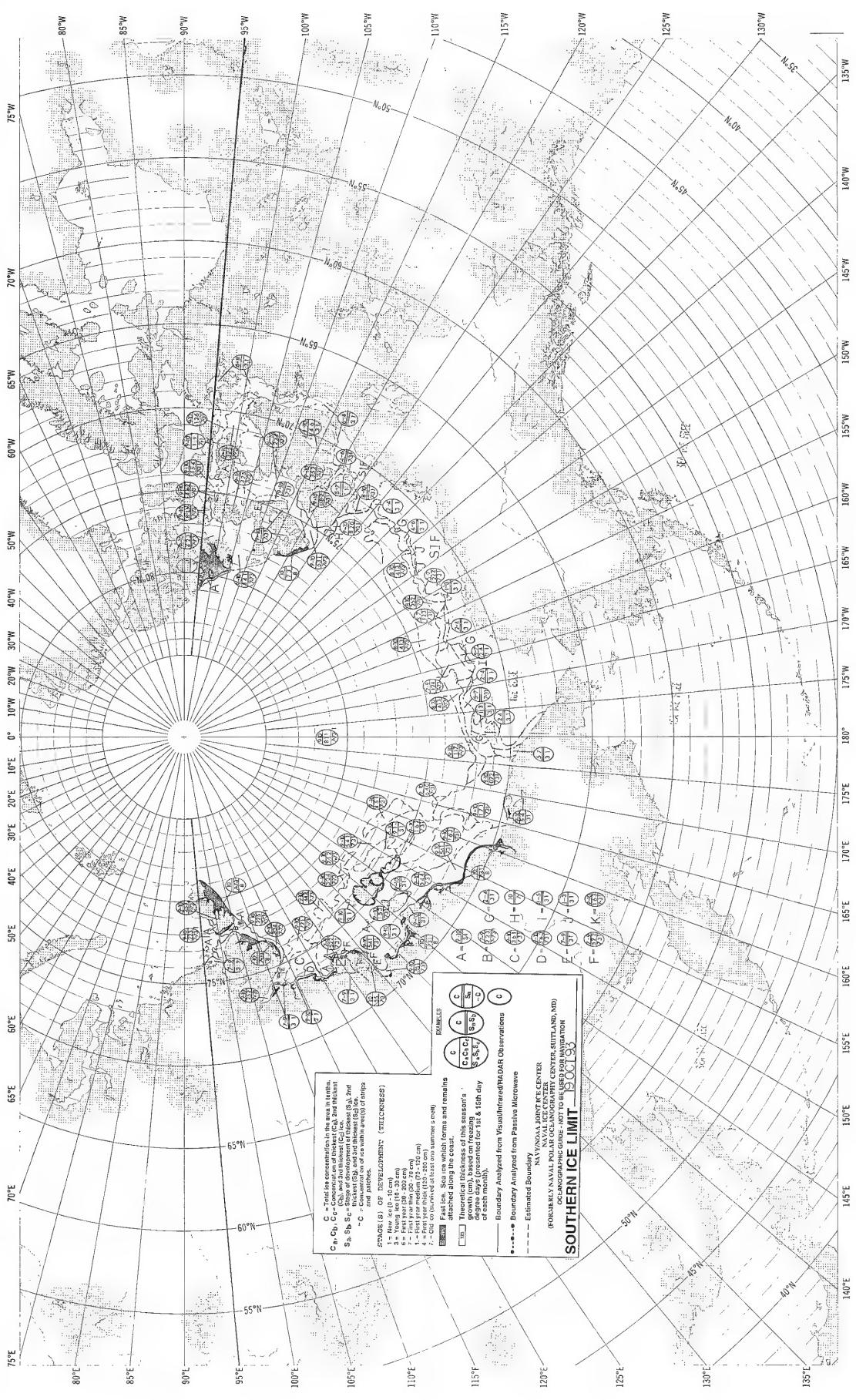


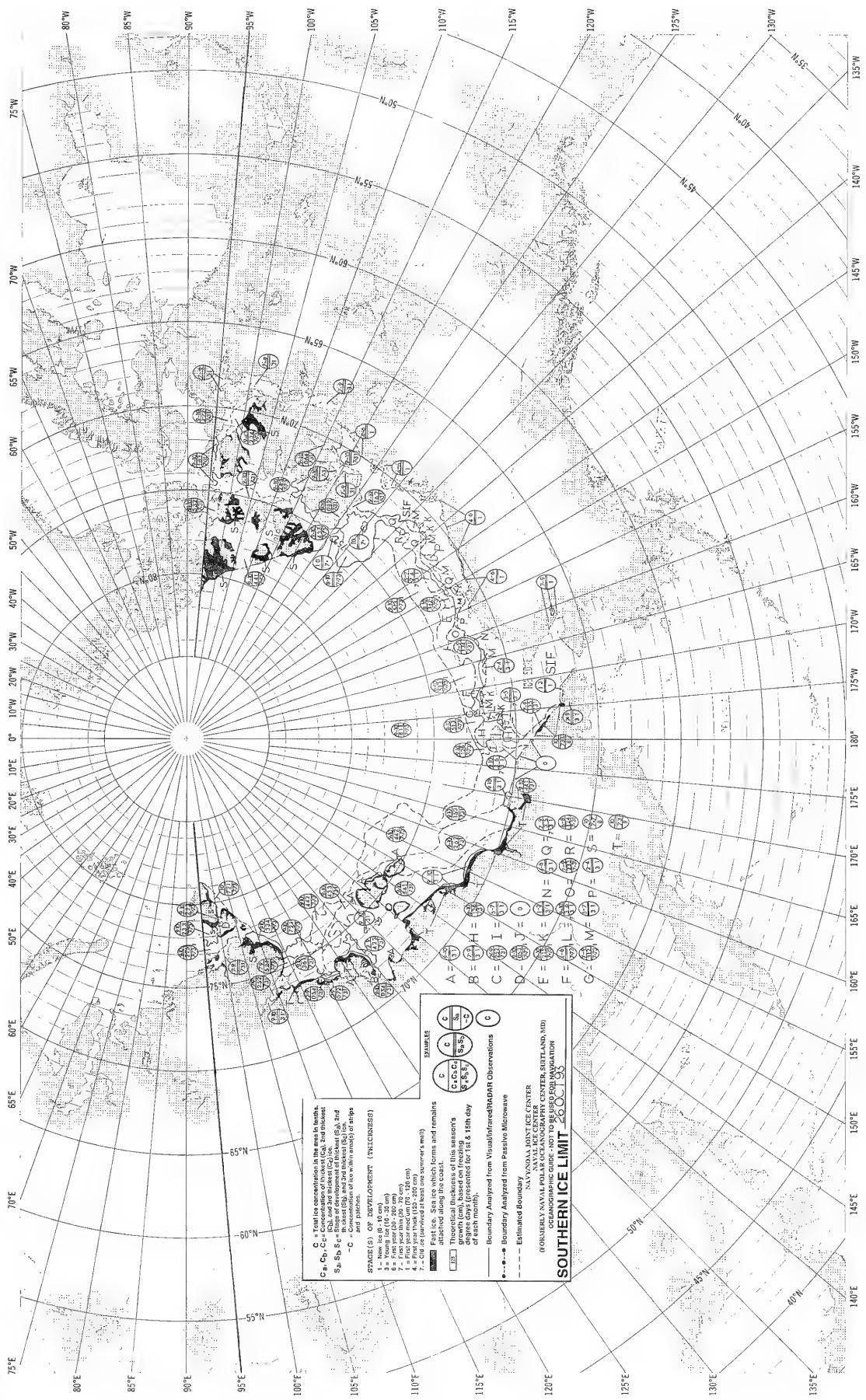


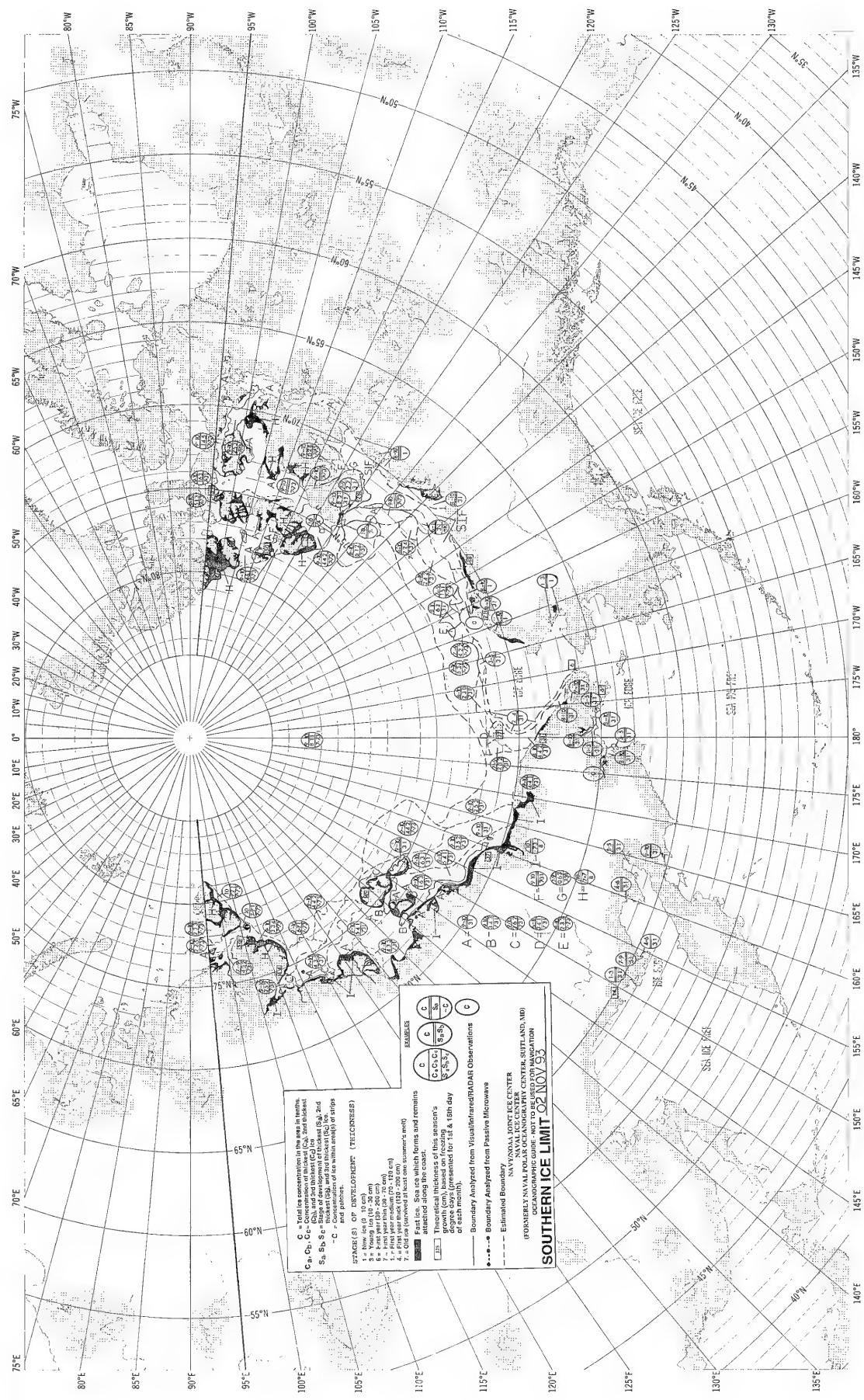


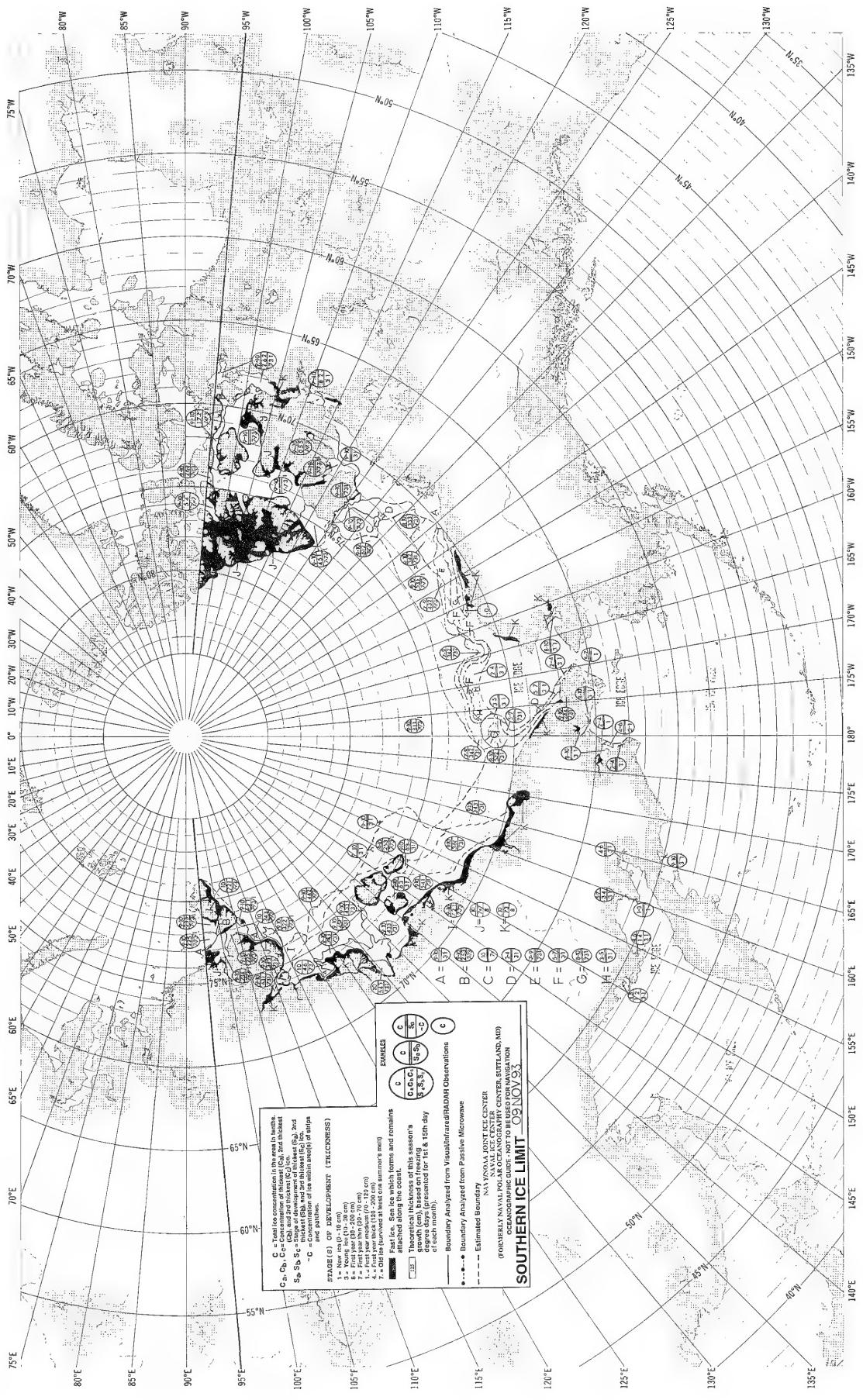


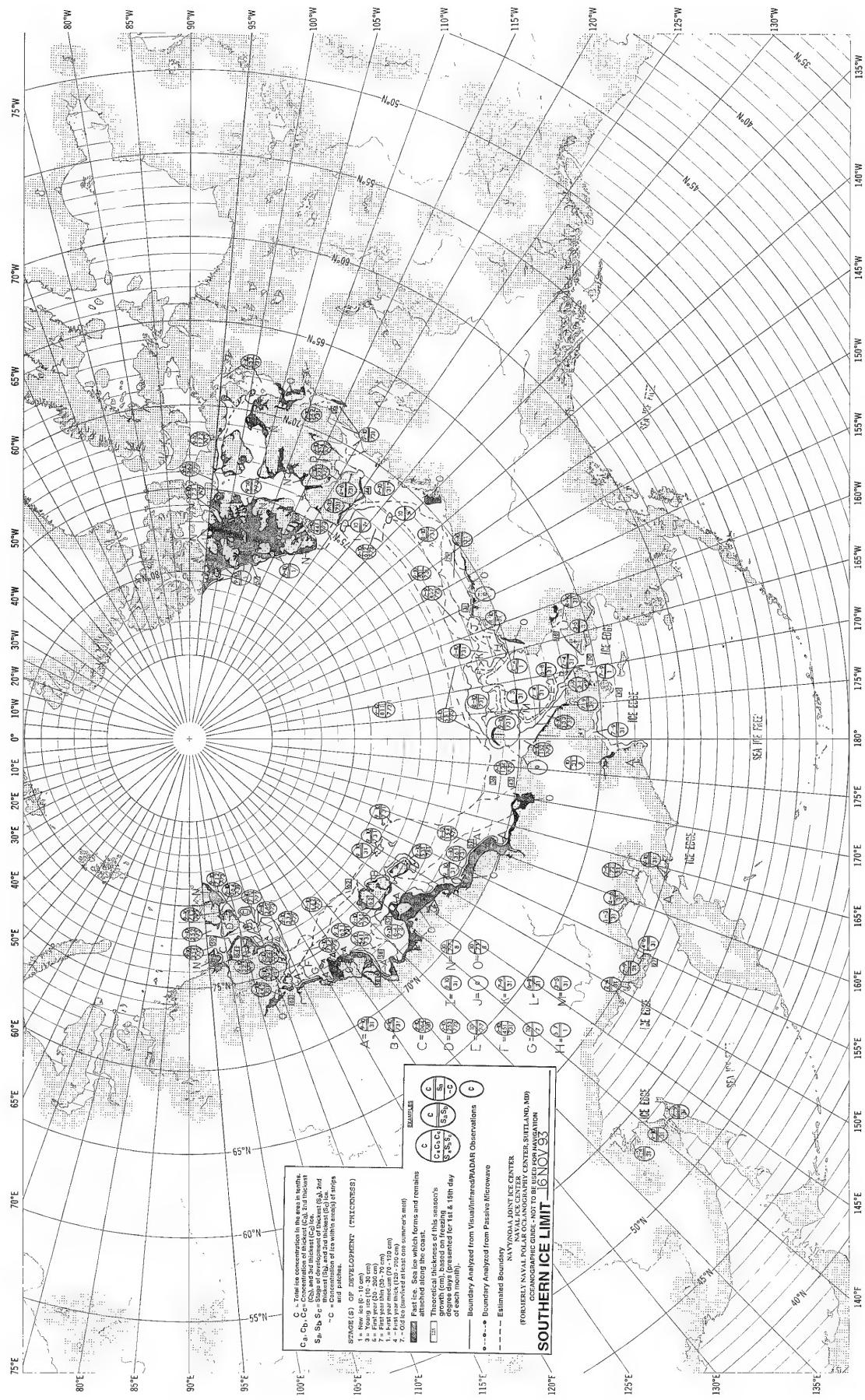


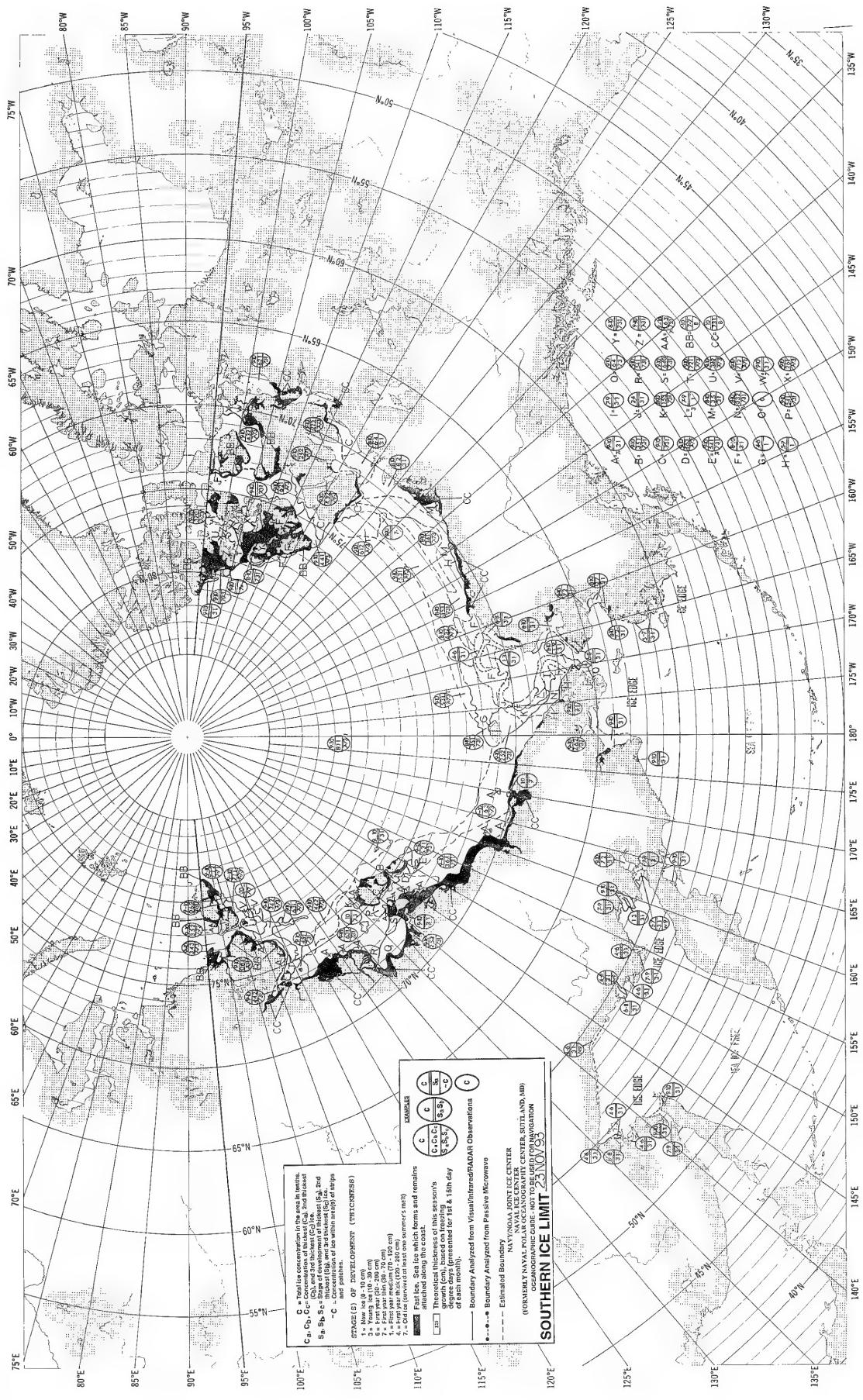


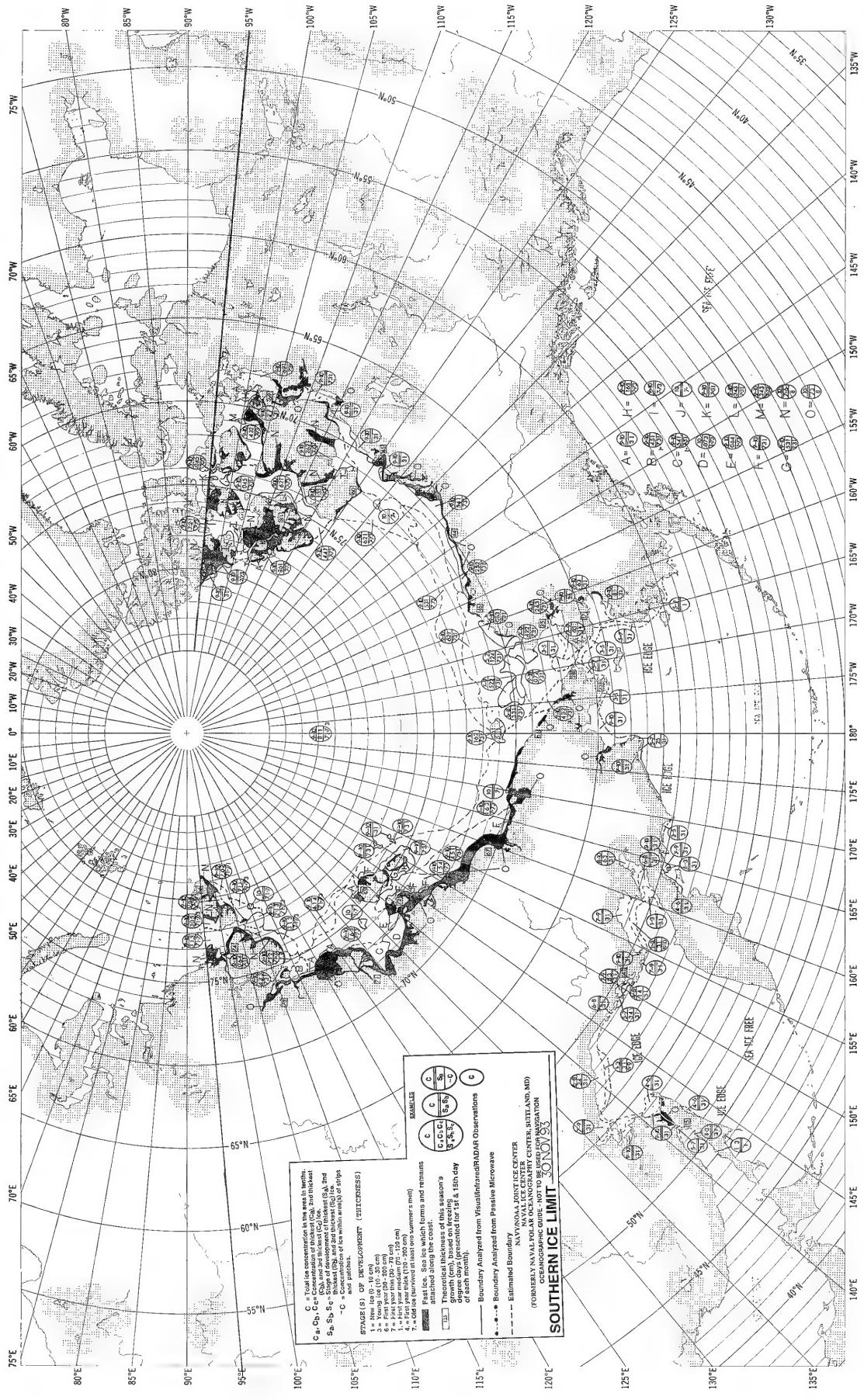


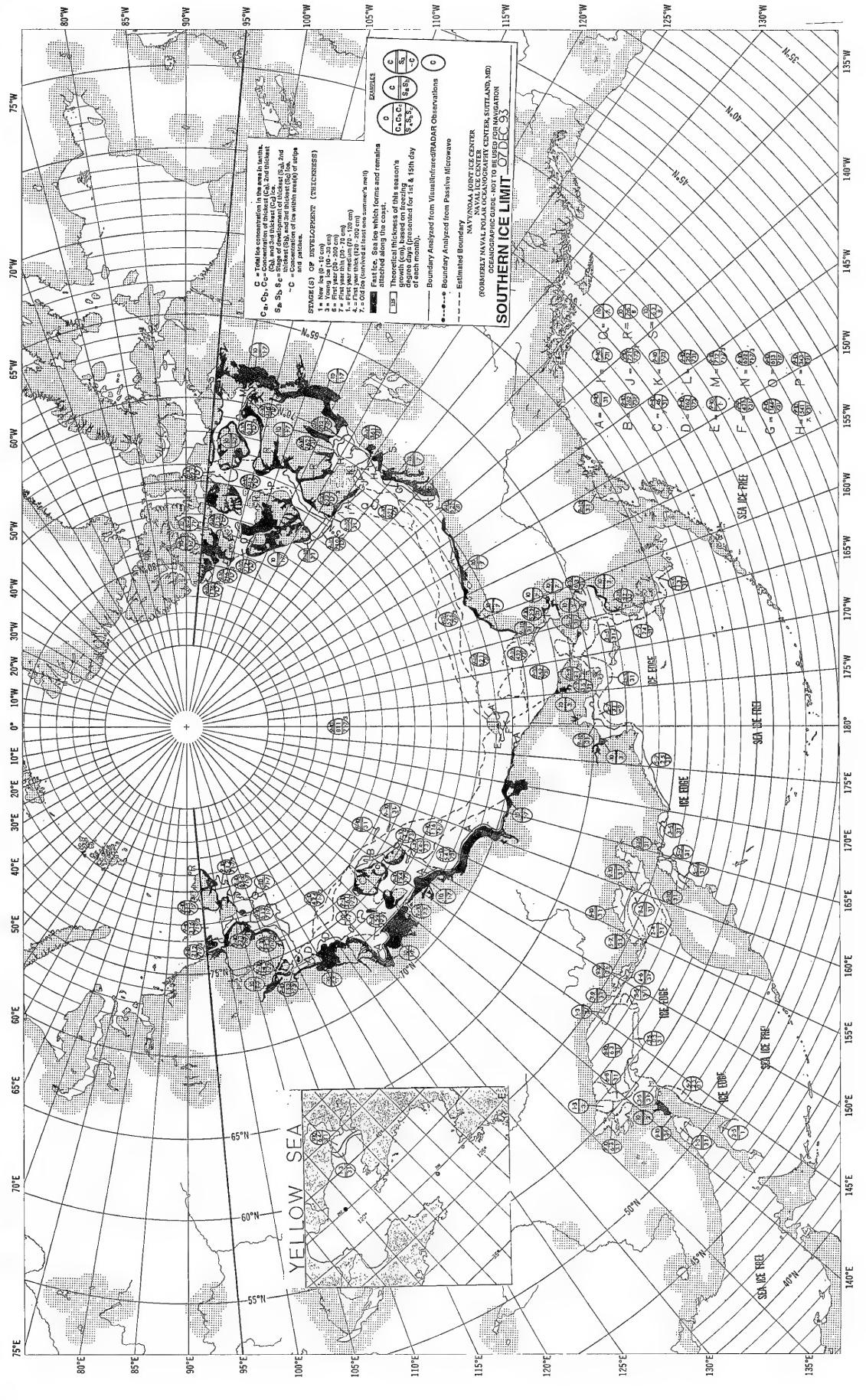


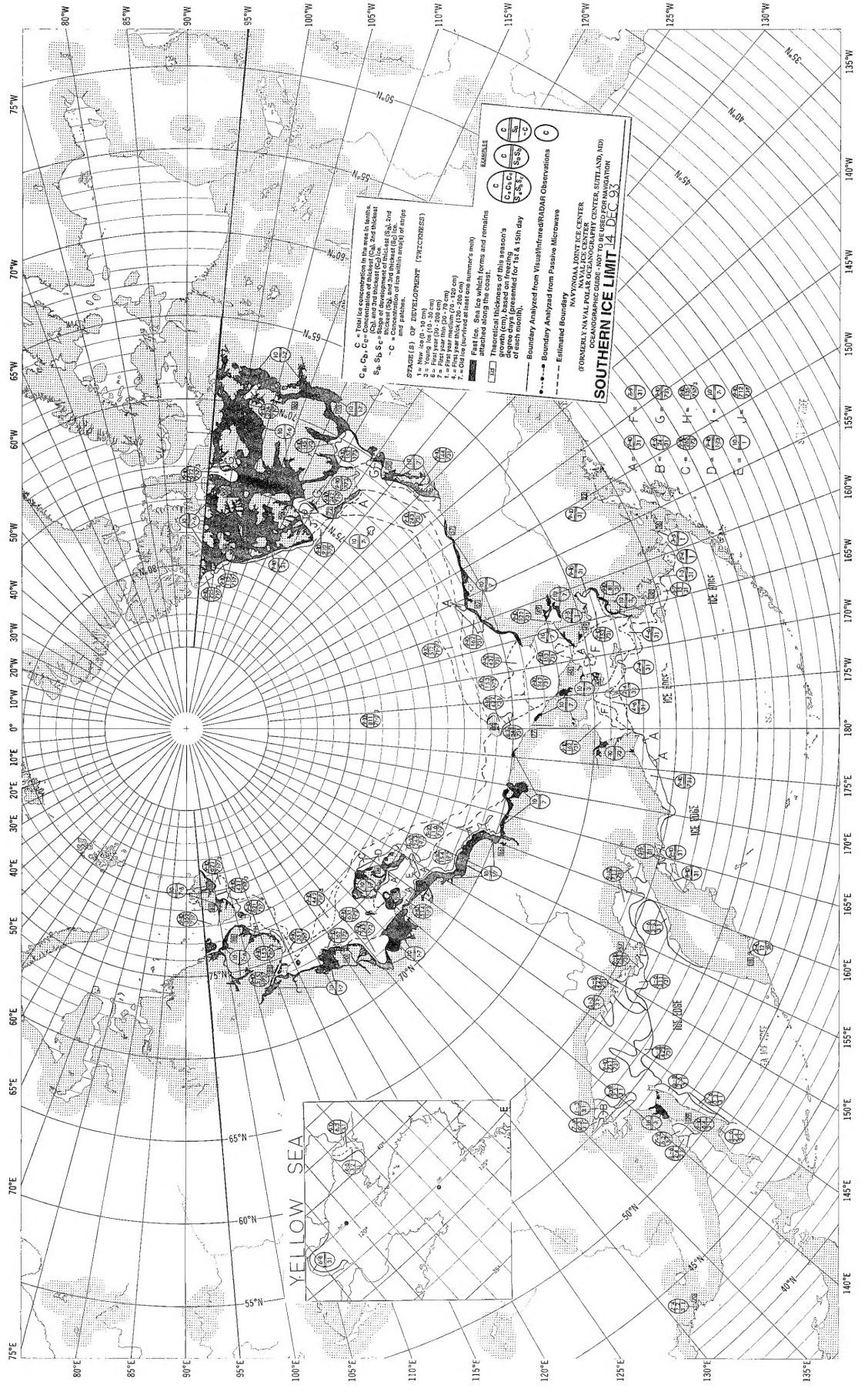


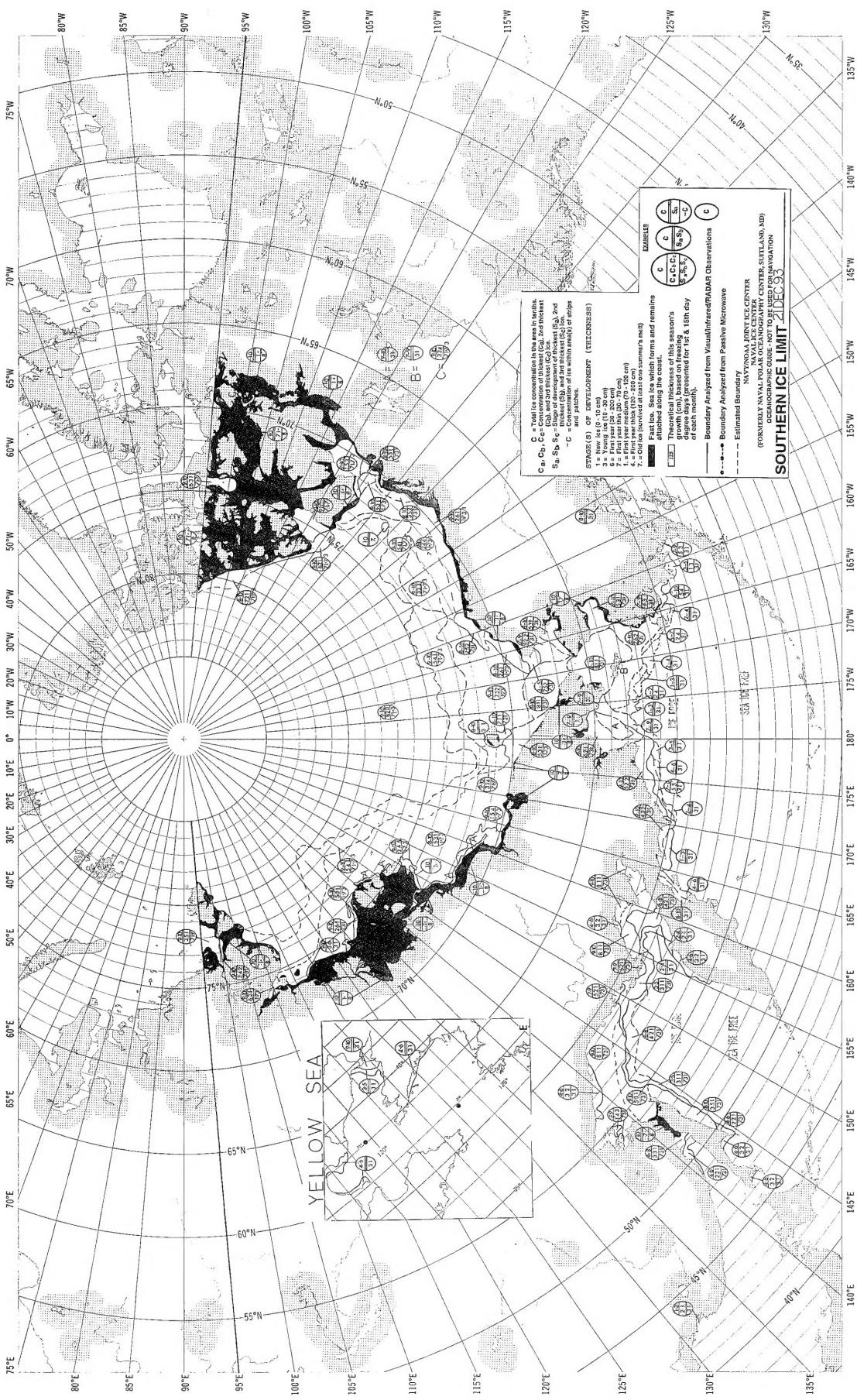












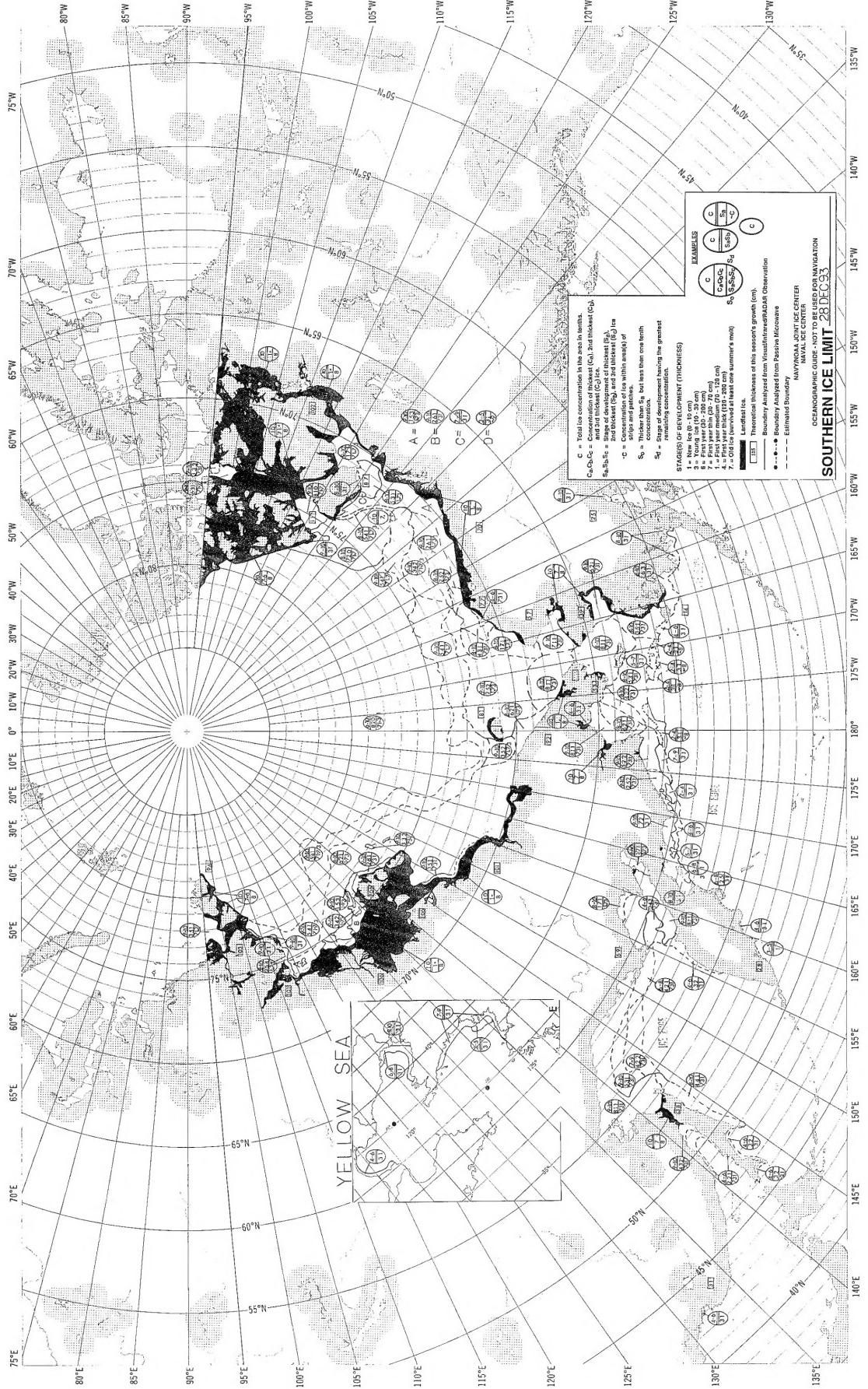


TABLE 1. SATELLITE DATA UTILIZED IN 1993

From	To	Sensor Platform	Sensor Type	Spectral Region	Resolution	Coverage
1-93	12-93	NOAA 10,11,12	<u>AVHRR</u> <u>HRPT/LAC</u> VIS NIR IR <u>GAC</u> VIS IR	0.58-0.68 um 0.725-1.10 um 10.5-12.5 um 0.58-0.68 um 10.5-12.5 um	1.1 km at nadir 4 km	Regional Global
1-93	12-93	DMSP F-10,11	<u>OLS FINE</u> VIS IR SSM/I PMW	0.4-1.1 um 10.2-12.8 um 1.55 cm (19.35 Ghz) and 0.81 cm (37.00 Ghz)	0.55 km 0.55 km 50 km 25 km	Regional Regional Global Global
1-93	12-93	ERS-1	<u>SAR</u> AMW	C-Band (5.3 Ghz)	100 m -240 m	Local Local

Abbreviations and Acronyms:

AVHRR--Advanced Very High Resolution Radiometer
 AMW--Active Microwave
 cm--centimeter
 GAC--Global Area Coverage
 GHZ--Giga-Hertz
 HRPT--High Resolution Picture Transmission
 IR--Infrared
 km--kilometer
 LAC--Local Area Coverage
 NIR--Near Infrared
 OLS--Operational Line Scan System
 PMW--Passive Microwave
 SSM/I--Special Sensor Microwave Imager
 um--micrometer
 VIS--Visible